Swinomish Indian Tribal Community

SWINOMISH INDIAN TRIBAL COMMUNITY

Water System Plan

December 2011

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Executive Summary

PURPOSE OF THE PLAN

The Swinomish Indian Tribal Community (SITC) is a non-municipal water purveyor that owns and operates a water system within the exterior boundaries of the Swinomish Reservation (Reservation). The water system requires qualified staff to operate and maintain it, and an ongoing capital improvement program to replace old components. The primary purpose of the SITC's Comprehensive Water System Plan (WSP) is to identify and schedule water system improvements that correct existing system deficiencies and ensure a safe and reliable supply of water to current and future customers. As a federally recognized American Indian Tribe, the SITC is not subject to Washington State laws governing WSPs, including Washington Administrative Code (WAC) 246-290-100. However, the SITC generally chooses to prepare a WSP in accordance with state law for the purposes of promoting regional cooperation and efficient water system planning.

SUMMARY OF KEY ELEMENTS

This WSP presents a description of the existing water system and service area, forecast of future water demands, policies and design criteria for water system operation and improvements, water system analyses, the operations and maintenance program, staffing requirements, a schedule of improvements, and a financial plan to accomplish the improvements. A summary of the key issues related to these elements is provided in the following sections.

Water Service Area

The SITC provided water service to approximately 396 customer accounts in 2009 within its existing water service area boundary, which is within the boundaries of the Reservation. The SITC is responsible for providing water service, utility management and water system development within the water service area. The SITC provides water service to primarily residential customers, who make up approximately 95 percent of all customer accounts, and the residential customers use approximately 78 percent of all water supplied.

Existing Water System

The majority of the water supplied to the SITC water system is provided by a primary intertie with the City of Anacortes (Anacortes). The SITC also has two wells that serve as emergency water supply for the water system. Four additional interties with Anacortes provide water service to the Casino Satellite system. The SITC manages two additional satellite water systems, the Kwonesum Satellite and the North Satellite, each of which have their own well source.

The SITC has two booster pump stations; one supplies the 323 Zone and the other supplies the 328 Zone. The SITC's water system has two storage facilities with a total capacity of approximately 0.28 million gallons (MG). One storage reservoir is located in the 323 Zone and the other is located in the 210 Zone. More than 14 miles of water main ranging in size from 2 inches to 12 inches conveys water from these facilities to the water system customers.

Past Water Usage and Conservation

The SITC's water supply and system-wide water demand from 2000 to 2009 has remained relatively constant with slight increases and decreases annually. The average daily demand for 2009 was approximately 56 gallons per minute (gpm). The average amount of water demand per person decreased from approximately 95 gallons per day (gpd) in 2000, to approximately 82 gpd in 2009, primarily due to local water use efficiency efforts. The SITC's average per capita demands are less than the average for the Puget Sound area. The SITC water system has met the distribution system leakage (DSL) standard of 10 percent or less for the 2007 through 2009 period. The SITC intends to continue its commitment toward the efficient use of water to continue to meet the DSL standard.

Future Water Demands and Water Supply

The overall water demand within the SITC's system is expected to increase by up to 10 percent within the next 6 years, and by up to 46 percent within the next 20 years, depending on the amount of future water use reductions from the SITC's Water Use Efficiency Program. The SITC's sources are sufficient to meet the projected demands of the system well beyond 2029.

Water Source and Quality

The primary sources of supply for the SITC water system are the physical interties with Anacortes. Under the 1996 Memorandum of Agreement Regarding Utilization of the Skagit River Basin Water Resources for Instream and Out of Stream Purposes (MOA), Anacortes has agreed to make available 2.8 million gallons per day (MGD) of water to the SITC. In addition, the SITC entered into a water supply agreement with Anacortes on January 1, 2006. This water supply agreement secured a supply of 42.0 MG of water annually from Anacortes for the SITC. In case of a disruption in service from Anacortes, the SITC maintains two emergency backup wells (Wells 2 and 3) that are capable of pumping water into the regional system at a combined rate of 85 gpm. The water right utilized for these two wells is a portion of the SITC's unquantified federal reserved water right.

Although the SITC has sufficient water available to supply the water system through 2029 and likely beyond, additional supply quantity negotiations with Anacortes may be necessary if the SITC plans to continue using the Anacortes intertie as the primary source of supply for average day demand. By 2015, the projected average day demand will exceed the amount available to the SITC from the City of Anacortes based on the 2006 Water Supply Agreement.

The drinking water regulations are constantly changing and will require additional monitoring and reporting in the future in an effort to ensure safe drinking water for the public. Therefore, it is imperative that the SITC stays abreast of the Environmental Protection Agency's (EPA) regulations to maintain compliance.

Operations and Maintenance

The SITC's operations and maintenance organization is staffed by well-qualified, technically trained personnel. The current staff of supervisory personnel and field crew, many of which are responsible for the water system and other utilities, have effectively operated the water system in the past. At the current staffing level, the SITC is capable of adequately operating the water system and complying with the minimum requirements, but many of the preventative maintenance tasks are not being accomplished at the desired frequency. The SITC will add staff in the future, as necessary and as

allowed by budget, to complete the preventative maintenance tasks at the desired frequency and to meet the increasing requirements of system operation and maintenance, due to customer growth and increased regulatory requirements.

Water System Evaluation

The existing water system was evaluated to determine to determine the necessary improvements for resolving existing system deficiencies and accommodate the projected growth in the number of water customers. The results of the evaluation are summarized below.

- The SITC has sufficient water available to supply the water system through 2029 and likely beyond, but additional supply quantity negotiations with Anacortes may be necessary if the SITC plans to continue using the Anacortes intertie as the primary source of supply for average day demand. By 2015, the projected average day demand will exceed the amount available to the SITC from Anacortes based on the 2006 Water Supply Agreement.
- The results of the existing storage evaluation indicate that the system has adequate storage in the 210 Zone operating area, but has a deficiency of approximately 500,000 gallons in the operating area that serves all other pressure zones, partially due to the significant amount of dead storage in the Main Reservoir that cannot be utilized.
- A portion of the 296 and 323 Zones, in the higher elevations along Reservation Road and Indian Road, has low pressure that is not meeting the minimum pressure requirements. A pressure zone consolidation and conversion will be necessary to resolve pressure and storage deficiencies. The pressure zone improvement will include a new booster pump station, transmission main, storage reservoir, and pressure reducing station.
- Several areas of the system require replacement of existing water mains to resolve deficiencies related to low fire flows, aging water main and undesirable materials.
- Several of the existing pressure reducing stations are not equipped with pressure relief facilities to prevent over-pressurization in the event that a pressure reducing station control valve fails in the open direction.
- The existing telemetry and control equipment has limited capabilities and is in need of replacement.

Proposed Water System Improvements and Financing Plan

Improvements to the water system are necessary, primarily to resolve existing system deficiencies but also to accommodate the increase in water demands from future growth. Improvements identified for the first 6 years of the Capital Improvement Plan (2011 to 2016) are estimated to cost approximately $2,113,000, which results in an average expenditure of approximately $352,000 per year. Improvements in the following 6 years (2017 to 2022) are estimated to cost approximately $1,385,000.

The financial analysis is intended to illustrate the feasibility of funding the operation and maintenance and capital improvements recommended for the water system for the next 6 years. Revenues from water sales will continue to support the operations and maintenance of the water system. The SITC will need to explore funding sources to complete the improvements in the Capital

Improvements Plan, including grant and loan funding from various government agencies. When grants and low interest loans are not available, the SITC will need to consider bank loans or the issuance of bonds. Repaying the loans or bonds will require increased user rates.

Introduction

1

The Swinomish Indian Tribal Community (SITC) is a non-municipal water purveyor that owns and operates a water system within the exterior boundaries of the Swinomish Reservation (Reservation). Water system data on file at the Washington State Department of Health (DOH) for the SIT system is shown below in **Table 1-1**.

Table 1-1
Water System Ownership Information

Information Type	Description
System Type	Group A - Community - Public Water System
System Name	Swinomish Utility and Environmental Services Authority
County	Skagit
DOH System ID Number	IH7560
EPA System ID Number	PWS10530032
Owner Number	7144
Address	PO Box 340, La Conner, WA 98257
Contact	Mr. John Petrich, Manager
Contact Phone Number	(360) 466-7223

OVERVIEW OF EXISTING SYSTEM

In 2009, the SITC provided water service to approximately 396 customer connections, or 482 equivalent residential units (ERUs), within the exterior boundaries of the Reservation. The exterior boundaries of the Reservation comprise an area of approximately 11.3 square miles, and the existing water service area comprises an area of approximately 3.2 square miles. The future water service area extends to all lands within the exterior boundaries of the Reservation except for an area in the northeastern part of the Reservation; this service area is discussed further in **Chapter 2**. The 2009 population served by the water system was 985, whereas the population residing within the exterior boundaries of the Reservation was 3,126.

An intertie with the City of Anacortes (Anacortes) provides water supply to the SITC. The SITC provides fluoridation of the water purchased from Anacortes at the Main Booster Station. There are a currently 12 homes located between the Anacortes intertie and the Main Booster Station that do not receive fluoridation. Water storage is provided by two reservoirs that have a total capacity of 0.28 million gallons (MG). In addition, the SITC water system has six pressure zones with five pressure reducing stations, two booster pump stations and approximately 14.6 miles of water main. A summary of 2009 water system data is shown in **Table 1-2**.

Table 1-2
2009 Water System Data

Description	Data
Water Service Population	985
Existing Water Service Area	3.2 square miles
Total Connections	396
Total ERUs	482
Demand per ERU	170 gallons per day
Annual Supply	29,860,060 gallons
Average Day Demand	57 gpm
Distribution System Leakage	10%
Max Day/Average Day Demand Factor	2.43
Peak Hour/Max Day Demand Factor	1.80
Number of Pressure Zones	6
Number of Wells & Total Capacity	2 (85 gpm)
Number of Interties & Total Agreed Capacity	1 (80 gpm)
Number of Interties & Total Water Right Capacity	1 (1,944 gpm)
Number of Pump Stations & Total Capacity	2 (410 gpm)
Number of Reservoirs & Total Capacity	2 (0.28 MG)
Number of Pressure Reducing Stations	4
Total Length of Water Main	14.6

AUTHORIZATION AND PURPOSE

In 2009, the SITC authorized RH2 Engineering, Inc., (RH2) to prepare a comprehensive water system plan (WSP) in accordance with WAC 246-290-100. As a federally recognized American Indian Tribe, the SITC is not subject to Washington State laws governing WSPs. However, the SITC chooses to prepare a WSP generally in accordance with state law for the purposes of promoting regional cooperation and efficient water system planning. The previous WSP was prepared for the SITC in 1986. The purpose of this updated WSP is as follows:

- To evaluate existing water demand data and project future water demands;
- To analyze the existing water system to determine if it meets minimum requirements mandated by DOH and the SITC's own policies and design criteria;
- To identify water system improvements that resolve existing system deficiencies and accommodate the system's future needs for at least 20 years into the future;

- To prepare a schedule of improvements that meets the goals of the SITC's financial program;
- To evaluate past water quality and identify water quality improvements, as necessary;
- To document the SITC's operations and maintenance program;
- To prepare water use efficiency, cross-connection control, wellhead protection and water quality monitoring plans; and
- To comply with all other water system plan requirements of DOH.

SUMMARY OF PLAN CONTENTS

A brief summary of the content of the chapters in the plan is as follows.

- **Chapter 1** introduces the SITC water system and outlines the objectives and organization of the WSP.
- **Chapter 2** presents the water service area, describes the existing water system and identifies the adjacent water purveyors.
- **Chapter 3** presents related plans, land use and population characteristics.
- **Chapter 4** identifies existing water demands and projected future demands.
- **Chapter 5** presents the SITC's operational policies and design criteria.
- **Chapter 6** discusses the SITC's water source and water quality monitoring program.
- **Chapter 7** discusses the water system analyses and existing system deficiencies.
- **Chapter 8** discusses the SITC's operations and maintenance program.
- **Chapter 9** presents the proposed water system improvements, their estimated costs and a proposed implementation schedule.
- **Chapter 10** summarizes the financial status of the water system and presents a plan for funding the water system improvements.
- The **Appendices** contain additional information and plans.

DEFINITION OF TERMS

The following terms are used throughout this WSP.

Capital Contribution Fee: A one-time fee paid by a property owner when connecting to the water system. This fee offsets the costs of providing water to new customers and recognizes that the existing water system was largely built and paid for by the existing customers.

Consumption: The true volume of water used by the water system's customers. The volume is measured at each customer's connection to the distribution system.

Cross-Connection: A physical arrangement that connects a public water system, directly or indirectly, with anything other than another potable water system; therefore, cross-connection presents the potential for contaminating the public water system.

Demand: The quantity of water required from a water supply source over a period of time necessary to meet the needs of domestic, commercial, industrial and public uses, and to provide enough water to supply firefighting, system losses and miscellaneous water uses. Demands are normally discussed in terms of flow rate, such as million gallons per day (MGD) or gallons per minute (gpm), and are described in terms of a volume of water delivered during a certain time period. Flow rates pertinent to the analysis and design of water systems are:

- **Average Day Demand (ADD):** The total amount of water delivered to the system in a year divided by the number of days in the year;
- **Maximum Day Demand (MDD):** The maximum amount of water delivered to the system during a 24-hour time period of a given year; and
- **Peak Hour Demand (PHD):** The maximum amount of **water** delivered to the system, excluding fire flow, during a one-hour time period of a given year. A system's peak hour demand usually occurs during the same day as the peak day demand.

Distribution System Leakage (DSL): Water that is measured as going into the distribution system but not metered as going out of the system.

Equivalent Residential Units (ERUs): One ERU represents the amount of water used by one single-family residence for a specific water system. The demand of other customer classes can be expressed in terms of ERUs by dividing the demand of each of the other customer classes by the demand represented by one ERU.

Fire Flow: The rate of flow of water required during firefighting, which is usually expressed in terms of gpm.

Head: A measure of pressure or force exerted by water. Head is measured in feet and can be converted to pounds per square inch (psi) by dividing feet by 2.31.

Head Loss: Pressure reduction resulting from pipeline wall friction, bends, physical restrictions or obstructions.

Hydraulic Elevation: The height of a free water surface above a defined datum; the height above the ground to which water in a pressure pipeline would rise in a vertical open-end pipe.

Maximum Contaminant Level (MCL): The maximum permissible level of contaminant in the water that the purveyor delivers to any public water system user, measured at the locations identified under WAC 246-290-300, Table 3.

Potable: Water suitable for human consumption.

Pressure Zone: A portion of the water system that operates from sources at a common hydraulic elevation. For example, the 323 Zone refers to the SITC's main pressure zone, which has a reservoir with an overflow elevation of 323 feet.

Purveyor: An agency, subdivision of the state, municipal corporation, firm, company, mutual or cooperative association, institution, partnership, or persons or other entity owning or operating a public water system. Purveyor also means the authorized agents of such entities.

Supply: Water that is delivered to a water system by one or more supply facilities, which may include supply stations, booster pump stations, springs and wells.

Storage: Water that is stored in a reservoir to supplement the supply facilities of a system and provide water supply for emergency conditions. Storage is broken down into the following five components, which are defined and discussed in more detail in **Chapter 7**: operational storage, equalizing storage, standby storage, fire flow storage and dead storage.

LIST OF ABBREVIATIONS

The abbreviations listed **Table 1-3** are used throughout this WSP.

Table 1-3
Abbreviations

Abbreviation	Description
ADD	average day demand
AWWA	American Water Works Association
CCR	Consumer Confidence Report
CIP	Capital Improvement Program
City	City of Anacortes
County	Skagit County
DBP	disinfection byproduct
DOH	Washington State Department of Health
DSL	distribution system leakage
EPA	Environmental Protection Agency
ERU	equivalent residential unit
fps	feet per second
GMA	Growth Management Act
gpm	gallons per minute
MCL	maximum contaminant level
MCLG	maximum contaminant level goal
MG	million gallons
MGD	million gallons per day
mg/l	milligrams per liter
OSHA	Occupational Safety & Health Administration
PDD	peak day demand
PHD	peak hour demand
psi	pounds per square inch
SITC	Swinomish Indian Tribal Community
SDWA	Safe Drinking Water Act
SOC	synthetic organic chemical
SWTR	Surface Water Treatment Rule
THM	trihalomethane
UGA	Urban Growth Area
USGS	United States Geological Survey
VOC	volatile organic chemical
WAC	Washington Administrative Code
WISHA	Washington Industrial Safety & Health Act

Water System Description

2

INTRODUCTION

This chapter describes the Swinomish Indian Tribal Community's (SITC) existing and future water service areas and the individual components of the water system. The results of the evaluation and analyses of the existing water system are presented later in **Chapter 7**. As a federally recognized American Indian Tribe, the SITC is exempt from Washington State Department of Health's (DOH) comprehensive water system plan (WSP) requirements. However, the SITC has chosen to prepare a WSP in compliance with a majority of the DOH requirements for the purposes of general water system planning.

WATER SERVICE AREA

History

The Swinomish Indian Tribe, which is governed by the Swinomish Indian Tribal Senate, is a signatory to the Treaty of Point Elliott of January 22, 1855, ratified by Congress on March 8, 1859. The Swinomish Indian Tribe is a federally recognized American Indian Tribe organized pursuant to Section 16 of the Indian Reorganization Act of 1934 (25 USC 476).

In 1986, the Swinomish Utility and Environmental Services Authority (SUA) was created by the adoption of Ordinance 51. The SUA, which is governed by a five-member Commission, was formed for the purpose of operating, maintaining and managing the public utilities on the Swinomish Reservation through a safe and efficient program and in a fiscally responsible, cost-effective and self-sufficient manner. The SUA initially focused on the operations, maintenance and management of the water and sewer facilities within the Swinomish Village at the time of the SUA's formation. The SUA's focus has remained on water and sewer facilities and expansion of these facilities in the 25 years of its existence.

Prior to 1984 the Swinomish Village received its water supply via a 4-inch main from the Town of La Conner. There were approximately 85 residential connections, plus approximately 10 connections to an assortment of Tribal administrative and enterprise buildings. Wastewater service was provided to the Swinomish Village via a 6-inch force main that pumped sewage to the La Conner Regional Wastewater Treatment Plant.

Beginning in 1984, the Tribe began a process of expansion and modernization of its water and sewer facilities to provide more reliable and cost effective service to its growing population and to address emerging environmental degradation of its shorelines; in particular, the impact on the Tribe's shellfish resource.

In 1984 and 1985, the SITC reclaimed an unused USGS well and constructed a pump house, storage facilities and transmission mains to provide water service to the Swinomish Village while abandoning its insufficient water connection with La Conner. This well, known as Well 1, was subsequently abandoned in 1988 due to iron bacteria contamination. The pump house, storage

facilities and transmission mains constructed in 1984 remain in place today as the primary facilities to provide and store water for the expanded SITC water system.

In 1987 the SITC drilled and equipped another deep groundwater well (Well 2) to supplement the water supply provided by Well 1. In 1988, an additional deep water well (Well 3) was drilled and equipped to supplement Well 2 due to the failure of Well 1. A water supply line that connected the SITC water system to the City of Anacortes (Anacortes) was also constructed in 1988. The construction of the Anacortes connection was originally intended as a source of a back-up supply of water. The Anacortes connection subsequently became the primary source of water for the SITC system in 1991, with Wells 2 and 3 as the back-up emergency supply source.

The construction of the deep water wells, Anacortes connection, pump house, reservoir and distribution system has enabled the SITC to supply safe, reliable drinking water and fire flow to much of the lands within the exterior boundaries of the Reservation. In 2009, SITC provided water supply to approximately 400 service connections.

Topography

The topography of the area served by the SITC varies greatly in elevation. The lowest areas served are along Puget Sound in the western and southern lands within the exterior boundaries of the Reservation, and along the Swinomish Channel in the eastern lands within the exterior boundaries of the Reservation. The highest areas served are located in the vicinity of the intersection of Tallawhalt Way and Indian Road, which has elevations of approximately 330 feet, and in the vicinity of the SITC Reservation Lane Booster Pump Station, which has elevations of approximately 280 feet.

Geology

Geologic units underlying the exterior boundaries of the Reservation include local deposits of Recent sand and gravel alluvium, beach sand, and sand, silt, and gravel landslide deposits; widespread Pleistocene glacial drift and till comprised of sandy silt with gravel, and sand outwash at the surface; deeper glacial and pre-glacial units of sand and gravel and sandy silt; and Jurassic to Cretaceous metamorphosed sedimentary and volcanic rock (Fidalgo Complex) that primarily underlie the glacial and pre-glacial units, but occur at the surface as small outcrops in the south and southwest areas within the exterior boundaries of the Reservation (Dragovich et. al., 2000; Didricksen, 2001).

The groundwater-saturated layers of deeper sand and gravel units comprise the greatest source of groundwater within the exterior boundaries of the Reservation. The SITC's supply wells and most other wells within the exterior boundaries of the Reservation were completed at elevations of approximately 0 to 100 feet above sea level. These units are confined and yield groundwater to wells at rates of a few gallons to several hundred gallons per minute (gpm). Depth to groundwater in productive wells ranges from 100 to 300 feet; the deepest wells and depths to groundwater occur in the center of the exterior boundaries of the Reservation. Wells completed in shallow glacial and alluvial units and in deep bedrock units typically yield less than 10 gpm.

Groundwater within the productive aquifers is recharged by slow percolation of precipitation falling on the surface and infiltration through shallow surficial layers. The average recharge rate is approximately one-third of the annual precipitation rate, or about 10 inches per year. Groundwater

in the productive aquifers generally flows radially outward from the center of the exterior boundaries of the Reservation.

Water Service Area

The SITC is located in southwestern Skagit County, Washington, in the southeastern portion of Fidalgo Island, approximately 70 miles north of Seattle. The SITC lands encompass approximately 7,200 acres, as shown in **Figure 2-1**.

The SITC's water service area is defined in the Skagit County Coordinated Water Supply Plan dated July 2000. According to the Coordinated Water Supply Plan, new water service within the exterior boundaries of the Reservation will be allowed for "in-fill" development consistent with current Swinomish Tribal Planning Department (STPD) system approval. Requests for water service for new developments or expansion of the existing non-SITC system are referred to the STPD. If service cannot be provided that is consistent with SITC policies or by a new remote tribal system, the conditions of the Satellite Management Agency (SMA) program, as described later in this chapter, will apply.

The SITC's existing water distribution system serves an area within the exterior boundaries of the Reservation, as shown in **Figure 2-1**. The existing water system extends south to the western edge of Marthas Bay near the Shelter Bay Community, and north to the City of Anacortes near the intersection of Similk Bay Road and Reservation Road. The distribution system extends east to the Swinomish Channel near the Swinomish Village, and west to Skagit Bay. The SITC's existing water service area encompasses approximately 3.2 square miles and is shown in **Figure 2-3**. The SITC is responsible for providing public water service, utility management and water system development within this area.

The SITC's future water service area boundary is also shown in **Figure 2-3**. The future water service area boundary extends to all lands within the exterior boundaries of the Reservation, except the existing and future retail service areas, and north from the existing water service area to the Anacortes Intertie. The SITC's future water service area boundary encompasses an area of approximately 10.8 square miles.

The SITC has another connection with Anacortes' water system, which serves the Swinomish Casino and the vicinity near the Swinomish Casino. The area served by this connection has been identified by the SITC as the existing retail service area. The area south of the existing retail service area, which the SITC plans to serve with the connection utilized by the casino, has been identified by the SITC as the future retail service area. The existing and future retail service areas are shown in **Figure 2-3**.

The SITC holds federal reserved water rights that may be used anywhere within the exterior boundaries of the Reservation, including the existing and future water service areas. The SITC's existing state water right can be also used throughout the Kwonesum and North Satellite water service areas, per the 2003 Municipal Water Law. See **Chapter 6** for more information on the SITC's water rights.

WATER SERVICE AGREEMENTS

Water Service Area Agreement

Every water purveyor located within a Critical Water Supply Service Area (CWSSA) is required to have a water service area agreement that identifies the external boundary of its water service area. Fidalgo Island was declared a CWSSA in 1984 by the Skagit Board of Commissioners. The SITC voluntarily participated in all critical water supply meetings, resulting in the adoption of the Fidalgo Island Critical Water Supply Plan (Fidalgo Plan). An interlocal water utility future service area agreement was executed in 1984 as part of the Fidalgo Plan, and the SITC accepted water service responsibility for its service area. An updated agreement was not prepared for subsequent versions of the Skagit Coordinated Water System Plan.

A copy of the agreement that was signed by the SITC in 1984 is contained in **Appendix A**.

SATELLITE SYSTEM MANAGEMENT

A Satellite Management Agency (SMA) is defined as a person or entity that is certified by DOH to own or operate more than one public water system without the necessity for a physical connection between such systems. SMAs were created to stop the proliferation of small water systems, many of which could not meet federal and state water quality and water system planning regulations. Based on the success of SMAs, DOH made recommendations to the legislature to include rules for designating entities as qualified SMAs. In July 1995, Senate Bill 5448 became the law that governs approvals of new water systems and sets forth requirements for SMAs. The goal of the law is to ensure that the people of this state will receive safe and reliable water supplies in the future from professionally managed and properly operated water systems. SMAs can provide three different levels of service:

1. Ownership of the satellite system;
2. Operations and management of the satellite system; or
3. Contract services only.

The service can be provided to new systems, existing systems that are no longer viable or existing systems placed into receivership status by the DOH.

The SITC is currently an SMA as it owns and operates the Kwonesum Satellite, North Satellite and Casino water systems. The North Satellite was formerly called the Cliff Skelton Water System. General water system data for these systems are summarized in **Table 2-1** and a copy of the DOH Water Facilities Inventory (WFI) Form for each system is included in **Appendix C**.

Table 2-1
Satellite Systems Owned and Operated by the SITC

Satellite System	Source	Connection(s) to System	Storage (gallons)
Kwonesum Satellite	Kwonesum Well	14	10,000
North Satellite	North Satellite Well	3	---
Casino	City Intertie	3	---

Kwonesum Satellite is located on Reservation Road at Sahalie Drive. The system serves 14 single-family homes with a buildout to 24 homes. The system includes a 10,000 gallon storage tank and treatment building. Treatment includes a sodium hypochlorite injection system and a Wellrite treatment system for minerals.

North Satellite is located at 14986 SneeOosh Road. The system serves three connections and provides a sodium softening system.

The Casino system is located in the northern portion of the SITC system. The Casino receives potable water from Anacortes through an 8-inch tap and serves three connections. The Casino water system is not connected to the SITC water distribution system.

The SITC may consider providing satellite system management services to other small neighboring water systems on a case-by-case basis. Upon agreement between two systems to have the SITC provide SMA services, the SITC will pursue the necessary steps to become the SMA of the neighboring water system. If the SITC decides not to become the SMA for small systems requesting assistance, then Public Utility District No. 1 of Skagit County (PUD) will likely provide these services with the approval of the SITC.

EXISTING WATER FACILITIES

This section provides a detailed description of the SITC's existing water system and the current operation of the facilities. Detailed data on all of the water system facilities is contained in **Appendix B**. General water system facility data is summarized in the DOH WFI form. A copy of this form is contained in **Appendix C**. The analysis of the existing water facilities is presented in **Chapter 7**.

Pressure Zones

The SITC serves customers within an elevation range of approximately sea level, near the shores of Skagit Bay and the Swinomish Channel, to approximately 280 feet near the Reservoir Lane Booster Pump Station. The wide range of elevations requires that the water pressure be increased or reduced to maintain pressures that are safe and sufficient to meet the system's flow requirements. This is achieved in the SITC's system by dividing the water system into six distinct pressure zones, as shown in **Figure 2-1**.

The pressures in the 210 and the 323 Zones are regulated by reservoir levels, as illustrated in the hydraulic profile, **Figure 2-2**. Pressures in the 210 Zone, which has a maximum hydraulic elevation of 210 feet, are established by the surface water level in the Pull and Be Damned Reservoir. The 210

Zone is predominately south of Snee Oosh Road along Pull and Be Damned Road. Pressures in the 323 Zone, which has a maximum hydraulic elevation of 323 feet, are established by the surface water level in the Main Reservoir. The 323 Zone is predominately located along Reservation Road south of the Main Booster Pump Station, Indian Road north of Snee Oosh Road, Snee Oosh Road between the Westshore and Village PRV stations and Tallawhalt Way from Indian Road to the Tallawhalt development's Squi-Qui PRV.

The 328 Zone is a pressure zone without storage, or a closed zone, that is currently supplied by the Reservoir Lane Booster Pump Station and is regulated by water levels in the hydropneumatic tank at the site of the booster pump station. The 328 Zone is located along Reservation Lane.

Pressures in the 296 Zone, which has a maximum hydraulic elevation of 296 feet, is established by the Anacortes Intertie. The 296 Zone is located along Reservation Road north of the Main Booster Pump Station. The 184, 188, and 210 Zones are supplied by pressure reducing stations with water from the 323 Zone. The pressure reducing stations decrease the pressure of water that is supplied to services located near Skagit Bay and the Swinomish Channel. The 184 Zone, which is located in the vicinity of Snee Oosh Road south of Beach Road and north of Sunset Drive, is served by the Shorewood PRV station, which serves customers within an elevation range of approximately 10 to 100 feet. The 188 Zone serves customers east of the Village PRV station and south of the Squi-Qui PRV station. This pressure zone is bordered on the east by the Swinomish channel and to the south by the Shelter Bay community and the elevations range from approximately 10 to 85 feet. The 188 Zone is served by the Village PRV station and Squi-Qui PRV station. Lastly, the 210 Zone is served by the Westshore PRV station, which serves customers in the vicinity of Pull and Be Damned Road south of Sunset Drive at elevations ranging from 0 to 140 feet.

Supply Facilities

Introduction

A majority of the water supply to the SITC water system is provided by a primary intertie with the City of Anacortes (Anacortes). Four additional interties with Anacortes provide water service to the Casino Satellite system. The SITC also has two wells that serve as emergency water supply.

City of Anacortes Intertie

The SITC has five connections with Anacortes. The primary Anacortes intertie, constructed in 1988, consists of a below-grade concrete vault with a 6-inch flow meter. The other connections with Anacortes serve the separate Casino water system.

Anacortes withdraws surface water from Skagit River. The water is treated by Anacortes using filtration, coagulation, sedimentation and chlorination. The water is also treated by the SITC at the Main Booster Station with sodium fluoride. The fluoridated water is distributed to a majority of the SITC. There are a few customers on Reservation Lane and scattered sites between the Anacortes intertie and the Main Booster Station who do not receive the additional fluoride treatment. Similarly, the water supplied to the satellite systems does not receive the additional treatment.

The intertie agreement between Anacortes and the SITC, which is included in **Appendix D**, commits an annual water volume of 42 million gallons. A summary of the intertie is shown in **Table 2-2**.

Table 2-2
Intertie Facility Summary

Intertie	Location	Pressure Zone	2011 Anacortes Agreement (gpm)	Water Right / Intertie Maximum Capacity (gpm)	Master Meter Size (inches)
City of Anacortes	East side of Reservation Road at Stevenson Road	296	80	1,944	6

Well 2 and 3

The SITC has two wells (Wells 2 and 3) that are designated as emergency wells. These emergency backup wells can supply approximately 85 gpm total and are connected to the distribution system in the event that the Anacortes water supply is interrupted. The groundwater from the wells is chlorinated at the Main Booster Pump Station and pumped into Main Reservoir by the Main Booster Pump Station. These wells are located north of the Main Booster Pump Station off of Reservation Road. A summary of the well sources is shown in **Table 2-3**.

Table 2-3
Well Facilities Summary

Description	Well 2[1]	Well 3[1]
Data		
Source No.	S03	S04
Section-Township-Range	S15 T34N R2E	S15 T34N R2
Well Pump Data		
Type	Submersible	Submersible
Motor Size (hp)	5	5
Pump Intake Depth (ft)	259	251
Well Construction Data		
Year Constructed	1987	1989
Depth (ft)	273.3	260
Casing Diameter (in.)	8	8
Depth to Top of Screen or Perforations (ft)	266	253
Depth to Bottom of Screen or Perforations (ft)	273.3	258
Water Bearing Interval or Length of Screen (ft)	7.25	5
Static Water Depth (ft)	176.5	179.7
Pump Test Drawdown (ft)	5.8	51.5
Pumping Water Depth (ft)	182.3	231.3
Pumping Rate (gpm)	42.5	42.5
Annual Water Right (gallons)[2]	65,700,000	78,840,000
Pressure Zone	296	296
Water Treatment	Cl2	Cl2
Control Facility	Manual	Manual

1 = Emergency backup well.

2 = The SITC's federal reserved water right is unquantified. The instantaneous rates identified in this table represent the physical capacity of the currently installed pumps. The annual volume is the maximum volume of water that could be pumped at the instantaneous rate. These limits are based on currently installed infrastructure and should not be considered a limit of the federal reserved water right.

Pump Station Facilities

The SITC's water system has a total of two booster pump stations. The Main Booster Station provides supply to the Main Reservoir from the Anacortes intertie and Wells 2 and 3, if needed. The Reservation Lane Booster Station provides water from the Anacortes intertie to a small pressure zone located before the Main Booster Station. A summary of the booster pump station facilities is shown in **Table 2-4**, and a detailed description of each facility is provided below. Additional data on the SITC's pump stations is contained in **Appendix B**.

Table 2-4
Booster Pump Station Facilities Summary

Booster Pump Station	Suction Pressure Zone	Discharge Pressure Zone	Year Constructed	Maximum Pumping Capacity (gpm)	Single Pump Capacity (gpm)	Number of Pumps	Pump Type	Pump Motor Size (hp)
Main Booster Station	296	323	1984	350	200	2	Pitless Booster	7.5
Reservation Lane	296	328	1997	60	30	2	Centrifugal	2

Main Booster Station

The Main Booster Station, which is more than 20 years old, is located at 14872 Reservation Road. The above-grade pump station has two pitless booster pumps that are used to pump water supplied from the Anacortes intertie to the Main Reservoir and portions of the distribution system. The Main Booster Station also has the ability to pump water from Wells 2 and 3 to the Main Reservoir, if needed. Each booster pump is rated at 200 gpm and powered by a 7.5-horsepower motor. The total capacity of the booster pump station is approximately 350 gpm when both pumps are operating. The pump station also has a generator, which is powered by propane, and an automatic transfer switch for standby power.

Reservation Lane Booster Station

The Reservation Lane Booster Station was constructed in 1997 and is located at 14936 Reservation Lane. The above-grade station has two centrifugal pumps that are used to pump water from the Anacortes intertie to two Well-X-trol pressure tanks located at the same site. The pump station currently serves eight homes located north of the Main Booster Station, with the capacity to serve up to 15 homes. Each pump is rated at 50 gpm and powered by a 2 horsepower motor. The station is typically operated with only one pump on at a time. The pump station does not have standby power, but it does have a power receptacle to enable connection of a portable engine generator.

Storage Facilities

The SITC's water system has two storage facilities. A summary of the storage facilities is shown in **Table 2-5**, and a detailed description of each facility is provided below. Additional data on the SITC's storage facilities is contained in **Appendix B**.

Table 2-5
Storage Facilities Summary

Reservoir Name	Pressure Zone	Year Constructed	Material	Capacity (MG)	Diameter (feet)	Base Elevation (feet)	Overflow Elevation (feet)	Overall Height (feet)
Main	323	1984	Concrete	0.20	25	268.0	323.0	55.0
Pull and Be Damned	210	1993	Concrete	0.08	26	196.0	216.0	20.0

0.20 MG Main Reservoir

The Main Reservoir is located at 17218 Indian Road and provides 202,000 gallons of water storage for the 323, 210, 188 and 184 Zones. The 25-foot diameter, 55-foot tall concrete tank was constructed in 1984 and provides approximately 3,673 gallons of storage per foot height. A single 8-inch diameter PVC water main serves as the reservoir's common inlet/outlet pipe. The reservoir is not anchored for seismic events.

0.08 MG Pull and Be Damned Reservoir

The Pull and Be Damned Reservoir is located at 18301 Indian Road and provides 80,000 gallons of water storage. The reservoir provides a pressure balancing function and is used for emergency and fire flow storage. The 26-foot diameter, 20-foot tall concrete tank was constructed in 1993 and provides approximately 4,000 gallons of storage per foot height. A single 6-inch diameter PVC water main serves as the reservoir's common inlet/outlet pipe. The reservoir is not anchored for seismic events.

Distribution and Transmission System

The SITC's water service area contains more than 14 miles of water main ranging in size from 2 inches to 12 inches. As shown in **Table 2-6**, approximately half the water main within the water service area is 6 inches in diameter, and 80 percent of all water main is 8 inches in diameter or smaller.

Table 2-6
Water Main Diameter Inventory

Diameter (Inches)	Length (Feet)	% of Total
4 or smaller	5,078	6.6%
6	40,934	53.1%
8	17,326	22.5%
10	0	0.0%
12	13,709	17.8%
Totals	**77,047**	**100%**

Most of the water main in the system is made of polyvinyl chloride (PVC), as shown in **Table 2-7**. All new SITC water main installations are required to use C900 PVC water main, unless otherwise approved.

Table 2-7
Water Main Material Inventory

Diameter (Inches)	Length (Feet)	% of Total
Asbestos Cement	908	1.2%
Ductile Iron	155	0.2%
PVC	75,984	98.6%
Totals	**77,047**	**100%**

The life expectancy of water main is generally 50 years. None of water main within the system is older than 50 years and approximately 8 percent of the water main is considered to be in fair condition, primarily including the PVC pipe located in the 184 Zone and a portion of the 188 Zone that was installed in the late 1960s and 1970s. Most of the water main in the system is generally in good or excellent condition.

Pressure Reducing Stations

Pressure reducing stations are connections between adjacent pressure zones that allow water to flow from the higher pressure zone to the lower pressure zone by reducing the pressure of the water as it flows through the station, thereby maintaining a safe range of pressures in the lower zone. A pressure reducing station is essentially a below-grade vault (typically concrete) that normally contains two pressure reducing valves, sometimes a pressure relief valve, piping and other appurtenances. The pressure reducing valve hydraulically varies the flow rate through the valve (up to the flow capacity of the valve) to maintain a constant pressure on the downstream side of the valve for water flowing into the lower pressure zone.

Pressure reducing stations can serve multiple purposes. They can function as an active supply facility by maintaining a continuous supply of water into a lower zone that has no other source of supply, such as a well or reservoir. Pressure reducing stations can also function as standby supply facilities that are normally inactive (no water flowing through them). The operation of this type of station is typically triggered by a drop in water pressure near the downstream side of the station. A typical application of this function is a pressure reducing station that is only needed to supply additional water to a lower zone during a fire flow situation. The pressure setting of the control valve within the station allows it to remain closed during normal system operation and open only during high demand conditions, like fire flows, to provide the additional supply needed.

The SITC's water system has a total of four pressure reducing stations, as shown in profile view in **Figure 2-2**. The Village and Squi-Qui PRV stations are connected between the 323 Zone and the 188 Zone. The Shorewood PRV station is connected between the 323 Zone and the 184 Zone. The Westshore PRV station is connected between the 323 Zone and the 210 Zone.

A listing of all SITC pressure reducing stations and related data is contained in **Appendix B**.

Water System Interties

Water system interties are physical connections between two adjacent water systems. Interties are normally separated by a closed isolation valve or control valve. Emergency supply interties provide water from one system to another during emergency situations only. An emergency situation may occur when a water system loses its main source of supply or a major transmission main and is unable to provide a sufficient quantity of water to its customers. Normal supply interties provide water from one system to another during non-emergency situations and typically supply water at all times.

The SITC has two water system interties. The water supply intertie with the City of Anacortes was discussed earlier in this chapter. This intertie is a normal supply intertie and the primary water supply source for the SITC. The second intertie is an emergency connection with the Shelter Bay Community Inc. water system. A memorandum of agreement exists among the Town of La Conner, the Shelter Bay Community, the SITC and the Indian Health Service. The Shelter Bay Community receives its water from the Town of La Conner system, which receives its water from the City of Anacortes. The SITC water system is connected to the Shelter Bay Community through an 8-inch intertie. In the event of an emergency, the SITC can receive water from the Shelter Bay Intertie.

A copy of both intertie agreements can be found in **Appendix D**.

Telemetry and Supervisory Control System

Successful operation of any municipal water system requires gathering and using accurate water system information. A telemetry and supervisory control system gathers information and can efficiently control a system by automatically optimizing facility operations. A telemetry and supervisory control system also provides instant alarm notification to operations personnel in the event of equipment failure, operation problem, fire or other emergency situations.

The SITC's telemetry and supervisory control system consists of a telemetry unit that communicates between the Main Reservoir and the Main Booster Station. The unit will page the on-call person through a dedicated phone line. The telemetry system for the SITC water system has an upgrade planned for 2012.

Water System Operation and Control

The 296 Zone is a closed zone (i.e., no storage) and is continuously supplied with water from the Anacortes Intertie, the SITC's main source of supply. The 296 Zone is also supplied with water from Wells 2 and 3, which are operated manually during an emergency.

The 328 Zone is a closed zone and is continuously supplied with water from the 296 Zone through the Reservation Lane Booster Pump Station.

The 323 Zone is supplied with water from the 296 Zone through the Main Booster Pump Station. The Main Booster Pump Station supplies water to the 323 Zone and the Main Reservoir. The operation of the Main Booster Pump Station is controlled by the water level in the Main Reservoir.

The 184 Zone is a closed zone and is continuously supplied with water from the 323 Zone through the Shorewood PRV station.

The 210 Zone is supplied with water from the 323 Zone through the Westshore PRV station. The Westshore PRV supplies water to the 210 Zone and the Pull and Be Damned Reservoir. The operation of the Westshore PRV station is controlled by the water level in the Pull and Be Damned Reservoir.

The 188 Zone is a closed zone and is continuously supplied with water from the 323 Zone through the Village and Squi-Qui PRV stations. In the event of an emergency, the 188 Zone can also be supplied with water from the Shelter Bay Intertie.

ADJACENT WATER SYSTEMS

The area outside and immediately adjacent to the SITC's future water service area includes the Town of La Conner located due east and the City of Anacortes, which is located to the northwest. There are six water systems within the exterior boundaries of the Reservation that are owned and operated by other water districts or private entities. Most of these water systems are relatively small and are shown in **Figure 2-3**. A brief description of each water system follows.

City of Anacortes

The City of Anacortes (02200) water system is a Group A system that is located northwest of the exterior boundaries of the Reservation. The system has approximately 6,517 service connections and is an approved system by DOH. This system derives its water from the Skagit River and provides water to the City of Oak Harbor, the Town of La Conner, the Skagit County Public Utility District No. 1 (PUD), two oil refineries at March's Point, Naval Air Station Whidbey Island and the SITC.

Town of La Conner

The Town of La Conner owns and operates the La Conner Water Department's (43350) water system. This water system is a Group A system that is located east of the exterior boundaries of the Reservation. The system has approximately 707 service connections and is an approved system by DOH. The La Conner Water Department purchases its water from the City of Anacortes, which derives its water from the Skagit River. This water system provides water to the Shelter Bay Community Inc. water system, as described later in this chapter.

Goldenview

The Goldenview water system is a Group B system that located south of the Sunny Slope Water System. The system has 12 to 13 service connections served by one groundwater well. There are no current plans for interties between this system and the SITC's water system, although the SITC has the capability to service this system if necessary in the future.

McGlinn Island

The McGlinn Island water system is a small water system located to the southeast of the exterior boundaries of the Reservation that obtains its water from a shallow well. The system serves a boating repair and storage business and has no plans to expand.

Reef Point Community Well

The Reef Point Community Well (71694E) water system is a Group B system located to the south of the Thousand Trails water system. The Reef Point Community Well water system provides service to approximately eight service connections with one groundwater well. There are no current plans for interties between this system and the SITC's water system or for expansion of this system.

Shelter Bay Community Inc.

The Shelter Bay Community Inc. water system (78155Q) is a Group A system located in the southern portion of the exterior boundaries of the Reservation. The system has approximately 872 service connections and could support up to 911 service connections. Surface water purchased from the La Conner Water Department provides water to this system. The La Conner Water Department purchases its water from the City of Anacortes, which derives its water from the Skagit River. There is an intertie between this system and the SITC's water system, which is to be used by the SITC in the event of an emergency.

Snee Oosh Land Company

The Snee Oosh Land Company (80800) water system is a Group A system located south of the Reef Point Community Well water system. The water system has approximately 63 service connections and could support up to 77 service connections. Five wells provide water to this system. There are no current plans for interties between this system and the SITC's water system or for expansion of this system.

Sunny Slope Water System

The Sunny Slope Water System (85340) is a Group B system that located south of the Snee Oosh Land Company water system. The system has approximately nine service connections with three groundwater wells. There are no current plans for interties between this system and the SITC's water system of for expansion of this system.

Thousand Trails

The Thousand Trails (00439) water system is a Group A system located in the western portion of the exterior boundaries of the Reservation. The system has approximately 334 service connections

and is an unapproved system by DOH. Two groundwater wells provide water to this system which primarily serves campsites. There are no current plans for interties between this system and the SITC's water system of for expansion of this system.

Padilla Bay
Similk Bay
Kiket Bay
Skagit Bay
Marthas Bay
Turners Bay
Stevenson Road
Anacortes Interties
Simlik Bay Road
12" PVC
296 Zone
8" PVC
Shee Oosh Road
6" PVC
Reservation Lane Booster Pump Station
328 Zone
Reservation Road
Well #3 and Well #2
Main Booster Pump Station
6" PVC
323 Zone
Fornsby Creek
Swinomish Channel
Munks Creek
Lone Tree Creek
Indian Road
Snee Oosh Creek
Dan Road
184 Zone
4" PVC
2" PVC
Tallawhalt Way
12" PVC
Main Reservoir Overflow Elevation: 323'
Squi-Qui PRV
Shorewood PRV
Westshore PRV
Village PRV
188 Zone
Ray Paul Lane
Pull and Be Damned Road
Shelter Bay Intertie
8" AC
210 Zone
6" DI
Pull and Be Damned Reservoir Overflow Elevation: 216'
20

Legend

- Exterior Boundary of the Reservation
- Existing Water Service Area
- Swinomish UGA*

Water Infrastructure

- Intertie
- Tank
- Well
- PRV
- Pump
- Reservoir

Water Main

- 184 Zone
- 188 Zone
- 210 Zone
- 296 Zone
- 323 Zone
- 328 Zone

Pressure Zone

- 184 Zone
- 188 Zone
- 210 Zone
- 296 Zone
- 323 Zone
- 328 Zone

*Excerpt from Skagit County Comprehensive Plan Map.

N
W E
S

1 in = 1,200 ft

0 1,200 2,400

DRAWING IS NOT TO SCALE
IF BAR IS NOT 2" LONG

SWINOMISH INDIAN TRIBAL COMMUNITY

COMPREHENSIVE WATER SYSTEM PLAN

FIGURE 2-1
EXISTING WATER SYSTEM

J:\Data\SIT\406-061\GIS\MAPS\SIT-WSP-Fig2-1.mxd DATE REVISED: 12/8/2011 BY: KDS

NORTH ⟷ SOUTH

400'

300'

200'

100'

0'

ANACORTES SUPPLY (HYDRAULIC GRADE: 297 FT)

Anacortes Intertie

296 Zone

328 Zone

323 Zone

Reservation Lane Booster Pump Station (80 gpm)

Main Booster Pump Station (330 gpm)

SHELTER BAY EMERGENCY SUPPLY (HYDRAULIC GRADE: 221 FT)

Well #2 (125 gpm)

Well #3 (150 gpm)

Main Reservoir
202,000 gallons
Base Elev: 268'
Overflow Elev: 323'
3,673 gal/ft

Shorewood PRV

Westshore PRV

Village PRV

Squi-Qui PRV

Shelter Bay Intertie

210 Zone

184 Zone

188 Zone

Pull and Be Damned Reservoir
80,000 gallons
Base Elev: 196'
Overflow Elev: 216'
4,000 gal/ft

Legend

- Anacortes
- Shelter Bay
- 184 Zone
- 188 Zone
- 210 Zone
- 296 Zone
- 323 Zone
- 328 Zone
- Meter
- Booster Pump Station
- Well Pump
- Pressure Reducing Station/Valve
- Equipment in Same Facility

RH2 ENGINEERS PLANNERS SCIENTISTS

SWINOMISH INDIAN TRIBAL COMMUNITY

Figure 2-2
Existing System Hydraulic Profile
Swinomish Indian Tribal Community Comprehensive Water System Plan

Date: MAR 11, 2011 Filename: SIT\406-061\CAD\SITWCP-HP.DWG

City of Anacortes
Stevenson Road
Anacortes Intertie
Padilla Bay
20
Casino / Existing Retail Service Area
Similk Bay Road
Tumers Bay
Future Retail Service Area
Similk Bay
Snee Oosh Road
Reservation Road
Fornsby Creek
North Satellite
Swinomish Channel
Munks Creek
Kwonesum Satellite
Kiket Bay
Reservation Road
Indian Road
Thousand Trails
Reef Point Community Well
Snee Oosh Land Co.
Snee Oosh Road
Snee Oosh Creek
Sunny Slope Water System
Dan Road
Tallawhalt Way
Goldenview
Snee Oosh Road
Ray Paul Lane
Pull and Be Damned Road
Pioneer Parkway
Town of La Conner
Shelter Bay Intertie
Shelter Bay Community Inc
McGlinn Island
Marthas Bay
Skagit Bay

Legend

- Exterior Boundary of the Reservation
- Existing Water Service Area
- Future Water Service Area
- Swinomish UGA*
- Casino / Existing Retail Service Area
- Future Retail Service Area

Water Districts in Tribal Boundary

- North Satellite
- Kwonesum Satellite
- Goldenview
- McGlinn Island
- Reef Point Community Well
- Shelter Bay Community Inc.
- Snee Oosh Land Co.
- Sunny Slope Water System
- Thousand Trails

Adjacent Water Systems

- Anacortes
- La Conner

*Excerpt from Skagit County Comprehensive Plan Map.

N
W E
S

1 in = 1,200 ft

0 1,200 2,400

DRAWING IS NOT TO SCALE
IF BAR IS NOT 2" LONG

SWINOMISH INDIAN TRIBAL COMMUNITY

SWINOMISH INDIAN TRIBAL COMMUNITY
COMPREHENSIVE WATER SYSTEM PLAN

RH2 ENGINEERS PLANNERS SCIENTISTS

FIGURE 2-3
SERVICE AREA AND ADJACENT SYSTEMS

J:\Data\SIT\406-061\GIS\MAPS\SIT-WSP-Fig2-3.mxd DATE REVISED: 12/8/2011 BY: KDS

Land Use and Population

3

INTRODUCTION

The Swinomish Indian Tribal Community's (SITC) *Comprehensive Plan* was originally prepared in 1996. The plan was developed to provide policy guidance for future development and guide the stewardship of the land within the exterior boundaries of the Reservation. This chapter demonstrates the compatibility of the SITC Comprehensive Water System Plan (WSP) with other plans, identifies the designated land uses within the existing and future service area and presents population projections within the SITC's planning area.

COMPATIBILITY WITH OTHER PLANS

Introduction

To ensure that the WSP is consistent with the land use policies that guide it and other related plans, the following planning documents were examined.

- The Swinomish Comprehensive Plan
- Skagit County Comprehensive Plan
- Skagit County Coordinated Water System Plan
- City of Anacortes Water System Plan
- Town of La Conner Comprehensive Water System Plan

Swinomish Comprehensive Plan

The Human Environment Element of the SITC's *1996 Comprehensive Plan* is the vision of how population growth should occur over a 25-year horizon, and the Population and Carrying Capacity Element is the SITC's vision of how development should occur over a 20-year horizon. While the Land Use Classifications Element goals and policies set forth general standards for locating land uses, the Land Use Map, which has been reproduced and is shown in **Figure 3-1**, indicates geographically where certain types of uses may be appropriate. The Land Use Map is a blueprint for development of an area, whereas the zoning code is the regulatory means for implementing it.

The Land Use Classification Element considers the general location of land uses, as well as the appropriate intensity and density of land uses given the current development trends. The Transportation/Circulation, Public Water Supplies and Public Energy Supply Elements ensure that new development will be adequately serviced without compromising existing levels of service, similar to the principal of concurrency as defined in the GMA. The SITC's WSP is reviewed and will be taken into consideration during the development of, and subsequent revisions, to the Capital Facilities Element of the *Comprehensive Plan*.

Skagit County Comprehensive Plan

The County adopted the *Skagit County Comprehensive Plan* in 2007. Since that time, the plan has not been amended. The plan consists of the following sections.

- Urban, Open Space and Land Use
- Rural
- Natural Resources Lands
- Environment
- Shoreline Master Program
- Housing
- Transportation
- Utilities
- Capital Facilities and Essential Public Facilities
- Economic Development
- Plan Implementation and Monitoring

The County's *Comprehensive Plan* guides development in rural, unincorporated Skagit County and designates land use in unincorporated UGAs. The authority of the SITC "extends to all lands within the exterior boundaries of the Reservation regardless of ownership while the County's regulatory authority extends only to non-trust and non-tribal fee-simple lands." To comply with federal statute and case law, the County designated non-trust and non-tribal fee-simple lands within the Swinomish UGA as residential. In accordance with the County's land use designations, the SITC designated the land within the UGA as urban residential, with the exception of the Swinomish Casino, which is classified as tribal economic, and the Swinomish Village (Village). The County and SITC designated the Swinomish UGA in 1997 and it is shown on **Figure 3-1**.

Similar to the SITC's *Comprehensive Plan*, the County's *Comprehensive Plan* "is based on a vision of how the County can grow and develop while protecting the region's high quality of life and equitably sharing public and private costs and benefits of growth." Both plans also contain land use goals "to protect public health, safety and welfare, and to enhance community character, natural beauty and environmental quality."

Skagit County Coordinated Water System Plan

The *Skagit County Coordinated Water System Plan* (CWSP), dated July 2000, is the result of a study performed by Economic and Engineering Services, Inc. under direction of the County's Water Utility Coordinating Committee (WUCC) representing the County, the City of Anacortes and the Skagit County Public Utility District No. 1; Indian Tribes; and the individual water supply utilities. The SITC voluntarily participates with the WUCC to promote regional cooperation and efficiency in water service delivery. The members of the WUCC represent the collective efforts of all public water systems with more than ten service connections that provide service within the Critical Water Supply Service Area (CWSSA). The WUCC declared Skagit County a CWSSA on March 26, 1990.

The purpose of the CWSP is to assist the area's water utilities in establishing an effective process for planning and developing of public water systems and restricting the proliferation of small public water systems. The CWSP accomplishes this by establishing future service area boundaries, minimum design standards, service review procedures, appeals procedures, long-term regional water supply strategies, water conservation program and goals, and the satellite system management program. As can be seen in the following sections of this WSP, the SITC has established policies, design criteria and goals that meet or exceed the requirements and goals of the CWSP.

LAND USE

The lands within the exterior boundaries of the Reservation currently encompass an area of approximately 7,600 acres. The future water service area is significantly larger than the SITC's current water service area. The SITC's Future Land Use Map, shown in **Figure 3-1** and originally published in the SITC's *Comprehensive Plan* and updated since its original publication, guides development within the exterior boundaries of the Reservation.

Approximately 63 percent (4,517 acres) of the land within the exterior boundaries of the Reservation is designated for active forest use. Approximately 11 percent (861 acres) is designated for rural residential use; approximately 9 percent (665 acres) is designated for urban residential use; approximately 8 percent (630 acres) is designated for tribal economic use; approximately 7 percent (559 acres) is agricultural land; approximately 3 percent (203 acres) is designated as Village; approximately 2 percent (171 acres) is designated as open space; and less than 1 percent (20 acres) is designated as commercial.

Land classified as tribal economic is land designated to be used to provide opportunities for SITC (public) economic development activities which support the SITC, federal Self-Determination Policy and Economic Self-Sufficiency Policy. The Village is a trust parcel of land set aside during the Allotment Period. The Village encompasses all land in the SITC's village area and is used for a variety of urban uses, such as public housing, tribal administrative functions, a community cemetery, playgrounds and commercial businesses.

POPULATION

Household Trends

The lands within the exterior boundaries of the Reservation are primarily forested land with residential communities comprised largely of single family residences along or near shorelines. The SITC estimates that the average household size on the lands within the exterior boundaries of the Reservation and within SITC Water Service Area (WSA) is currently 2.60 persons per household, which is the average household size in the entire County. The SITC anticipates the average household size will remain consistent through 2029.

Existing and Future Population

The County has experienced rapid population growth and extensive physical developments in recent years. The population of the County increased approximately 15.5 percent from 2000 to 2009 based

on OFM estimates. The population on the lands within the exterior boundaries of the Reservation increased more than 17 percent and the population of the WSA increased approximately 23 percent during the same period. **Table 3-1** illustrates the historical population growth of the WSA and the lands within the exterior boundaries of the Reservation since 2000.

Table 3-1
Population Trends and Projections

Year	Population	
	Water Service Area	Lands Within the Exterior Boundaires of the Reservation
Historical		
2000	803	2,664
2001	842	2,659
2002	855	2,728
2003	837	2,784
2004	858	2,826
2005	853	2,938
2006	884	2,974
2007	892	3,035
2008	972	3,097
2009	985	3,126
Projected		
2015 (+ 6 years)	1,103	3,466
2019 (+ 10 years)	1,189	3,737
2029 (+ 20 years)	1,435	4,510

The projected future growth within the WSA and on the lands within the exterior boundaries of the Reservation are shown in **Table 3-1**. The projected WSA population data is based on current residential connections to the SITC Water System, the SITC's estimated household size of 2.60 persons per household and the SITC's estimated growth rate projection of 1.90 percent. The projected population data for the lands within the exterior boundaries of the Reservation is based on current OFM estimates of the SITC's population and the SITC's estimated growth rate projection of 1.90 percent. The WSA's population is expected to grow from 985 people in 2009 to approximately 1,435 people in 2029. The population on the lands within the exterior boundaries of the Reservation is expected to grow from 3,126 people in 2009 to approximately 4,510 people in 2029.

Padilla Bay
Stevenson Road
Similk Bay Road
Turners Bay
Similk Bay
Kiket Bay
Skagit Bay
Marthas Bay
Snee Oosh Road
Reservation Road
Fornsby Creek
Swinomish Channel
Monks Creek
Lone Tree Creek
Indian Road
Dan Road
Snee Oosh Creek
Ray Paul Lane
Pull and Be Damned Road
Pioneer Parkway
Tallawhalt Way
20
C
TE
A
F
OS
UR
RR
SV

Legend

- Exterior Boundary of the Reservation
- Existing Water Service Area
- Future Water Service Area
- Swinomish UGA*

Tribal Community Land Use

- RR Rural Residential
- UR Urban Residential
- C Commercial
- SV Swinomish Village
- TE Tribal Economic
- A Agriculture
- F Forestry
- OS Open Space

*Excerpt from Skagit County Comprehensive Plan Map.

N
W E
S

1 in = 1,200 ft

0 1,200 2,400

DRAWING IS NOT TO SCALE
IF BAR IS NOT 2" LONG

SWINOMISH INDIAN TRIBAL COMMUNITY

SWINOMISH INDIAN TRIBAL COMMUNITY
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FIGURE 3-1
LAND USE

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Water Demands

4

INTRODUCTION

A detailed analysis of system demands is crucial to the planning efforts of a water supplier. A demand analysis first identifies current demands to determine if the existing system can effectively provide an adequate quantity of water to its customers under the most crucial conditions, in accordance with federal and state laws. A future demand analysis then identifies projected demands to determine how much water will be needed to satisfy the water system's future growth and continue to meet federal and state laws.

The magnitude of water demands is typically based on three main factors: 1) population; 2) weather; and 3) water use classification. Population and weather have the two largest impacts on water system demands. Population growth has a tendency to increase the annual demand, whereas high temperature has a tendency to increase the demand over a short period of time. Population does not solely determine demand because different populations use varying amounts of water. The use varies based on the number of users in each customer class, land use density and irrigation practices. Water conservation efforts also impact demands and can be used to accommodate a portion of system growth without increasing a system's supply capacity.

Demands on the water system determine the sizes of storage reservoirs, supply facilities, water mains and treatment facilities. Several different types of demands were analyzed and are addressed in this chapter, including average day demand, maximum day demand, peak hour demand, fire flow demand, future demands and a demand reduction forecast based on the proposed Water Use Efficiency Program.

CURRENT POPULATION AND SERVICE CONNECTIONS

Residential Population Served

The population within the exterior boundaries of the Swinomish Reservation (Reservation) was 3,126 in 2009 based on estimates from the Washington State Office of Financial Management. The population served by the Swinomish Indian Tribal Community's (SITC) water system, however, was much less than that since the system does not serve all the lands within the exterior boundaries of the Reservation. The 2009 residential population served by the SITC water system is estimated to be approximately 985. The computation of this number is discussed later in this chapter and a more detailed discussion of the SITC's population and household trends is in **Chapter 3**.

In 2009, the SITC provided water service to an average of 396 customer accounts, of which approximately 379 (96 percent) of these accounts were single-family residential customers and 17 accounts (4 percent) were non-residential customers, as shown in **Chart 4-1**.

EXISTING WATER DEMANDS

Water Consumption

Water consumption is the amount of water used by all customers of the system, as measured by the customer's meters. **Table 4-1** shows the historical average number of connections, average annual consumption and average daily consumption per connection of each customer class for the SITC's community system (excluding all satellites) from 2000 through 2009.

Table 4-1
Average Annual Metered Consumption and Service Connections

Year	Customer Class		Totals
	Residential	Non-Residential	
Average Number of Connections			
2000	309	16	325
2001	324	16	340
2002	329	16	345
2003	322	16	338
2004	327	16	343
2005	328	14	342
2006	340	12	352
2007	343	14	357
2008	374	16	390
2009	379	17	396
Average Annual Consumption (gallons)			
2000	19,585,306	6,612,922	26,198,228
2001	17,133,312	8,997,177	26,130,489
2002	18,546,969	9,318,201	27,865,170
2003	19,511,577	8,205,930	27,717,507
2004	20,164,564	6,550,180	26,714,744
2005	21,495,845	4,865,564	26,361,409
2006	19,345,328	3,941,416	23,286,744
2007	18,570,212	6,507,353	25,077,565
2008	19,889,126	8,278,246	28,167,372
2009	21,201,926	5,779,197	26,981,123
Average Daily Consumption Per Connection (gal/day/conn)			
2000	174	1,132	
2001	145	1,541	
2002	154	1,596	
2003	166	1,405	
2004	169	1,122	
2005	180	952	
2006	156	900	
2007	148	1,273	
2008	146	1,418	
2009	153	931	
Average 2000-2009	159	1,227	

As shown in **Chart 4-1**, the residential class represents approximately 96 percent of all connections, but only 79 percent of total system consumption, as shown in **Chart 4-2**. This is due to the lower consumption per connection of residential customers as compared to non-residential customers. As shown in **Table 4-1**, the residential customers use an average of approximately 159 gallons per day per connection, compared to the non-residential customers that use an average of approximately 1,227 gallons per day per connection.

Chart 4-1
2009 Water Connections by Customer Class

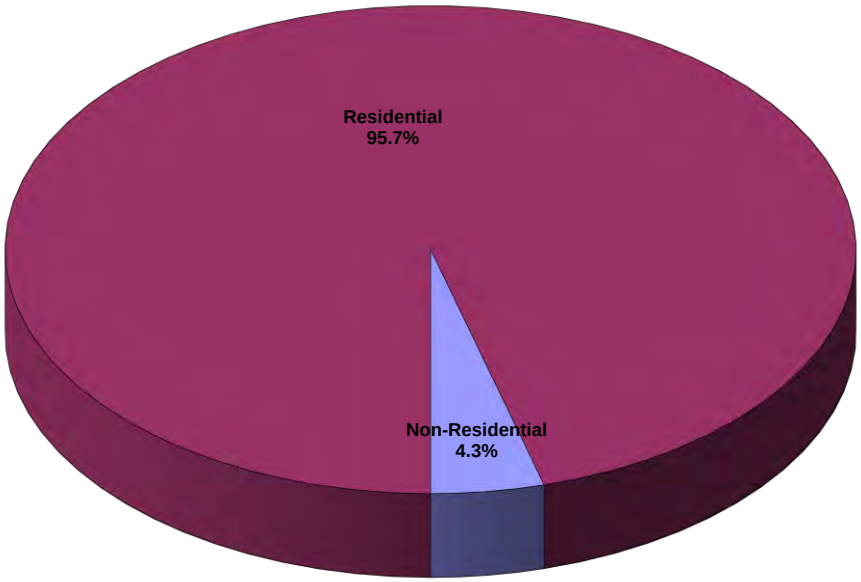
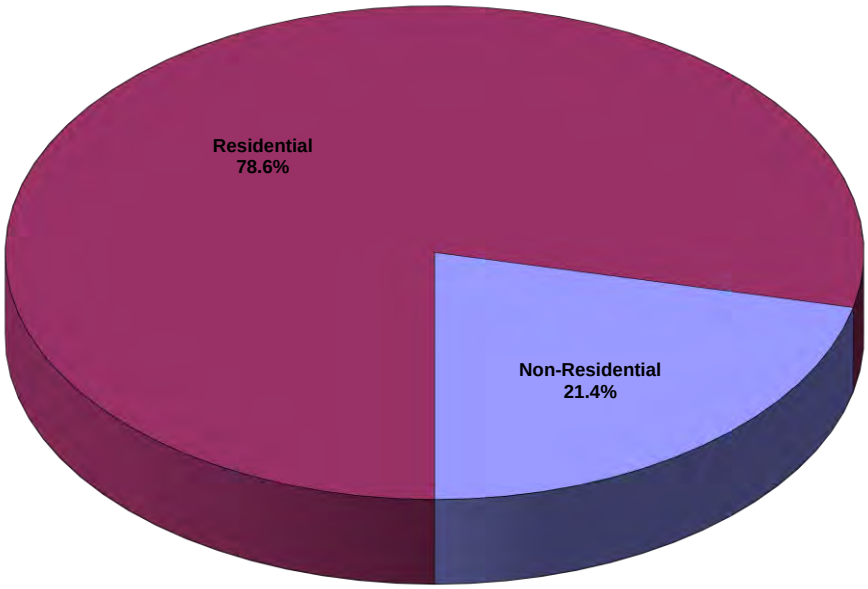


Chart 4-2
2009 Water Consumption by Customer Class



Water Supply

Water supply, or production, is the total amount of water supplied to the system, as measured by the meters at each supply source. Water supply is different than water consumption in that water supply is the recorded amount of water put into the system and water consumption is the recorded amount of water taken out of the system. The measured amount of water supply of any system is typically larger than the measured amount of water consumption, due to non-metered water use and water loss (e.g., distribution system leakage), which will be described more in the **Distribution System Leakage** section. **Table 4-2** summarizes the total amount of water supplied to the system from 2000 through 2009, the calculated average day demand and the average demand per capita for each year. The supply data does not include the amount supplied to the satellite systems. The average per capita demand for 2007 and 2009 of 85 gpd is used to forecast water demands in future years based on future population estimates.

Table 4-2
Historical Water Supply and System Demand

Year	Average Population	Annual Supply (gallons)	Average Daily Demand (gpm)	Average Demand per Capita (gal/day/capita)
2000	803	27,887,372	53	95
2001	842	27,022,148	51	88
2002	855	28,514,303	54	91
2003	837	30,217,368	57	99
2004	850	28,105,400	53	91
2005 [1]	853	23,295,789	44	75
2006 [1]	884	24,186,942	46	75
2007	892	28,415,805	54	87
2008 [2]	972	27,325,850	52	77
2009	985	29,383,016	56	82
Average 2000 - 2009 [3]				90
Average 2007 - 2009 [4]				85

1 = A portion of 2005 and 2006 supply data is not available due to a malfunctioning meter.
2 = The annual supply for 2008 is low which may be due to errors in supply quantities.
3 = Average demand for 2000 - 2009 excludes 2005, 2006 and 2008 data.
4 = Average demand for 2007 - 2009 excludes 2008 data.

Distribution System Leakage

The amount of distribution system leakage (DSL) in a water system is calculated as the difference between the amount of water supply and the amount of authorized water consumption. There are many sources of DSL in a typical water system, including water system leaks, inaccurate supply metering, inaccurate customer metering, illegal water system connections or water use, fire hydrant usage, water main flushing, well backwash, and malfunctioning telemetry and control equipment resulting in reservoir overflows. Several of these types of usages – such as water main flushing, fire

hydrant usage and well backwash – may be considered authorized uses if they are tracked and estimated. Although real losses from the distribution system, such as reservoir overflows and leaking water main, should be tracked for accounting purposes, these losses must be considered leakage. The Water Use Efficiency (WUE) Rule, which became effective in 2007, establishes a DSL standard of 10 percent or less based on a rolling 3-year average.

Although the SITC is not required to comply with the WUE Rule, the SITC has chosen to follow the general requirements of the WUE Rule in order to establish guidelines for efficient use of water. The rolling 3-year average DSL for the water system for the previous 3 years can not be calculated because of the high amount of consumption for the system in 2008. However, the average DSL for 2007 and 2009 is 10.0%, which is the DSL standard. The amount of DSL in the SITC system varies from 2.3 percent in 2002 to 11.7 percent in 2007, as shown in **Table 4-3**.

The SITC water system has met the DSL standard of 10 percent or less for the 2007 through 2009 period based on the DSL in 2007 and 2009. The SITC intends to continue its commitment toward the efficient use of water to continue to meet the DSL standard. The SITC plans to record the amount of water used for flushing the distribution system and construction purposes for more accurate DSL data in future years.

Table 4-3
Distribution System Leakage

Year	Total Supply (gallons)	Total Consumption (gallons)	Total Distribution System Leakage (%)	Rolling 3-Year Average DSL (%)
2000	27,887,372	26,198,228	6.1%	---
2001	27,022,148	26,130,489	3.3%	---
2002	28,514,303	27,865,170	2.3%	3.9%
2003	30,217,368	27,717,507	8.3%	4.6%
2004	28,105,400	26,714,744	4.9%	5.2%
2005 [1]	23,295,789	26,361,409	-13.2%	---
2006 [1]	24,186,942	23,286,744	3.7%	---
2007	28,415,805	25,077,565	11.7%	---
2008 [2]	27,325,850	28,167,372	-3.1%	---
2009	29,383,016	26,981,123	8.2%	10.0%
Average 2000 - 2009 [3]			6.4%	5.9%

1 = A portion of 2005 and 2006 supply data is not available due to a malfunctioning meter. Distribution system leakage cannot be accurately calculated for those years.
2 = The annual supply for 2008 is low which may be due to errors in supply quantities. Distribution system leakage cannot be accurately calculated for this year.
3 = Average excludes 2005, 2006 and 2008 data.

Equivalent Residential Units

The demand of each customer class can be expressed in terms of equivalent residential units (ERUs) for demand forecasting and planning purposes. One ERU is equivalent to the amount of water used

by one single-family residence. The number of ERUs represented by the demand of the other customer classes is determined from the total demand of the customer class and the unit demand per ERU from the single-family residential demand data.

Table 4-4 presents the computed number of ERUs for each customer class from 2000 through 2009. The demands shown are based on supply data that was computed from the consumption of each customer class and the average amount of DSL from each year. Data is excluded for the years 2005 through 2006 due to missing supply data from the City of Anacortes due to a failure of the Anacortes master meter for a portion of those years. Data is also excluded for 2008 due to the annual consumption data being higher than supply, which may be due to errors in supply or consumption quantities. The average demand per ERU for 2007 and 2009 was 167 gpd. This is significantly less than the average single-family demand in the Puget Sound area, which is typically between 250 and 300 gpd.

The average demand per ERU for 2007 and 2009 of 167 gpd will be used later in this chapter to forecast ERUs in future years based on estimated future demands. This demand per ERU value will also be used to determine the capacity (in terms of ERUs) of the existing system in **Chapter 7**.

Table 4-4
Equivalent Residential Units

Year	Average Number of Connections	Average Annual Demand (gallons)	Demand per ERU (gal/day/ERU)	Total ERU's
Residential				
2000	309	20,848,079	185	309
2001	324	17,717,957	150	324
2002	329	18,979,030	158	329
2003	322	21,271,340	181	322
2004	327	21,214,245	178	327
2005 [1]	328	---	---	---
2006 [1]	340	---	---	---
2007	343	21,042,215	168	343
2008 [2]	374	---	---	---
2009	379	23,089,348	167	379
Average 2000 - 2009 [3]			169	
Average 2007 - 2009 [4]			167	
Non-Residential				
2000	16	7,039,293	185	104
2001	16	9,304,191	150	170
2002	16	9,535,273	158	165
2003	16	8,946,028	181	135
2004	16	6,891,155	178	106
2005 [1]	14	---	---	---
2006 [1]	12	---	---	---
2007	14	7,373,590	168	120
2008 [2]	16	---	---	---
2009	17	6,293,668	167	103
System-Wide Totals				
2000	325	27,887,372	185	413
2001	340	27,022,148	150	494
2002	345	28,514,303	158	494
2003	338	30,217,368	181	457
2004	343	28,105,400	178	433
2005 [1]	342	---	---	---
2006 [1]	352	---	---	---
2007	357	28,415,805	168	463
2008 [2]	390	---	---	---
2009	396	29,383,016	167	482

1 = A portion of 2005 and 2006 supply data is not available due to a malfunctioning meter. ERUs could not be calculated for 2005 and 2006.
2 = The annual supply for 2008 is low which may be due to errors in supply quantities. ERUs could not be calculated for 2008.
3 = Average demand per ERU for 2000 - 2009 excludes 2005, 2006 and 2008 data.
4 = Average demand per ERU for 2007 - 2009 excludes 2008 data.

Average Day Demand

Average day demand (ADD) is the total amount of water delivered to the system in a year divided by the number of days in the year. The ADD is determined from historical water use patterns of the system and can be used to project future demand within the system. ADD data are typically used to determine standby storage requirements for water systems. Standby storage is the volume of a reservoir used to provide water supply under emergency conditions when supply facilities are out of service. Water supply records from the Anacortes Intertie and Wells 2 and 3 were reviewed to determine the system's ADD. The system's average day demand from 2000 through 2009 is shown in **Table 4-2**.

Maximum Day Demand

Maximum day demand (MDD) is the maximum amount of water used throughout the system during a 24-hour time period of a given year. MDD typically occurs on a hot summer day when lawn watering is occurring throughout much of the system. As a guideline, Washington Administrative Code (WAC) 246-290-230 requires the distribution system to provide fire flow at a minimum pressure of 20 psi during maximum day demand conditions. Supply facilities (wells, springs, pump stations, interties) are typically designed to supply water at a rate that is equal to or greater than the system's MDD.

The MDD was determined from calculating the combined flow of water into the system from all supply sources and reservoirs on the peak day. This resulted in an estimated MDD of 130 gpm on April 15, 2004. 2004 was the most recent peak year with available daily reservoir data. As shown in **Table 4-5**, the MDD/ADD ratio was 2.43.

Peak Hour Demand

Peak hour demand (PHD) is the maximum amount of water used throughout the system, excluding fire flow, during a one-hour time period of a given year. As a guideline, WAC 246-290-230 requires new public water systems or additions to existing systems to be designed to provide domestic water at a minimum pressure of 30 psi during PHD conditions. Equalizing storage requirements are typically based on PHD data.

The PHD, like the MDD, is typically determined from the combined flow of water into the system from all supply sources and reservoirs. Since hourly supply information and reservoir level data is not available from all of the SITC's supply and storage facilities, the system's PHD could not be computed based on actual system data. Instead, it was estimated by applying a typical PHD/MDD ratio of 1.80 to the system's estimated MDD amount. This resulted in an estimated PHD of 234 gpm for the peak hour in 2004. **Table 4-5** also shows the peaking factors of the water system based on the ADD, MDD and PHD data presented above. These peaking factors will be used later in this chapter in conjunction with projected ADDs to project future peak day and peak hour demands of the system.

Table 4-5
Maximum Day Demands and Peaking Factors

Max Day Demand Data

Demand Type	Date	Demand (gpm)
Average Day Demand (ADD)	2004	53
Maximum Day Demand (MDD)	August 15, 2004	130
Peak Hour Demand (PHD)	Data unavailable Assumed PHD/PDD = 1.80	234

Peaking Factors

Description	Factor
Maximum Day Demand/Average Day Demand (MDD/ADD)	2.43
Peak Hour Demand/Maximum Day Demand (PHD/MDD)[1]	1.80
Peak Hour Demand/Average Day Demand (PHD/ADD)	4.37

1 = Typical value assumed.

Fire Flow Demand

Fire flow demand is the amount of water required during firefighting as defined by applicable codes. Fire flow requirements are established for individual buildings and expressed in terms of flow rate (gpm) and flow duration (hours). Fighting fires imposes the greatest demand on a water system because a high rate of water must be supplied over a short period of time, requiring each component of the system to be properly sized and configured to operate at its optimal condition. Adequate storage and supply is useless if the transmission or distribution system cannot deliver water at the required rate and pressure necessary to extinguish a fire.

General planning-level fire flow requirements were established for the different land use categories to provide a target level of service for planning and sizing future water facilities in areas that are not fully developed. The general planning-level fire flow requirement for each land use category is shown in **Table 4-6**. The water system analyses presented in **Chapter 7** are based on an evaluation of the water system for providing sufficient fire flow in accordance with these general planning-level fire flow requirements. The fire flow requirements shown in the table do not necessarily equate to actual existing or future fire flow requirements for all buildings, since this is typically based on building size, construction type and fire suppression systems provided. Improvements to increase the available fire flow to meet actual fire flow requirements greater than those shown in the table shall be the responsibility of the developer.

Table 4-6
General Planning-level Fire Flow Requirements

Land Use Category	Fire Flow Requirement (gpm)	Flow Duration (hours)
Forestry	1,000	2
Rural Residential	1,000	2
Urban Residential	1,000	2
Swinomish Village (Fish Processing Plant)	2,750	2
Swinomish Village (Along Pioneer Parkway)	3,000	3
Swinomish Village (Other)	1,500	2

FUTURE WATER DEMANDS

Basis for Projecting Demands

Future demands were calculated from the results of the average per capita demand computations shown in **Table 4-2** and the projected population data from **Chapter 3**. Future demand projections were computed with and without water savings expected from implementing WUE measures contained in the SITC's WUE Program discussed in the following section. The calculated future per capita demand of 85 gpd was used for all demand projections without savings from WUE measures. The per capita demand was reduced to reflect the WUE goals and used as the basis for future water demand projections with implementation of the WUE Program. The SITC's WUE Program presents a goal to reduce water use per capita by 0.5 percent annually through 2015 and achieve a total reduction in water use of 5 percent by the year 2025. Applying these water reduction goals to the future per capita demand results in a projected per capita demands with conservation of 82 gallons per day in the year 2015 (6-year forecast) and 80 gallons per day in the year 2029 (20-year forecast).

Water Use Efficiency Program

The fundamental elements of a WUE program include planning requirements and DSL standards, as well as goal setting and performance reporting. The SITC is not required to adhere to the Municipal Water Supply – Efficiency Requirements Act, also known as the Municipal Water Law. The SITC does not have a formal WUE program, but they will move towards a formal program in the future. The SITC is committed to continue collecting water use data as documented earlier in this chapter. The SITC currently meters all customer connections, interties, booster pump stations and wells. The existing DSL meets the standard 10 percent, thus significant efforts are not necessary to reduce the existing DSL to meet the standard. The SITC will strive to document authorized unmetered water consumption uses such as construction, flushing and fire fighting activities to reduce the amount of DSL in the system. The SITC has set a goal to reduce water usage by 3 percent by the year 2015 and by 5 percent by the year 2025. Meeting these water use reduction goals would result in a demand per ERU of 162 gallons per day in the year 2015 and 159 gallons per day in the year 2025. The SITC will consider increasing the awareness of water conservation importance with the use of its Consumer Confidence Report to educate customers regarding the importance of water use efficiency.

Consideration will also be given to a rate structure that provides economic incentives for water conservation.

Demand Forecasts

Table 4-7 presents the projected water demand forecast for the SITC water system. The actual demand data from 2007 through 2009 is also shown in the table for comparison purposes. The future ADDs were projected based on population estimates for the given years and the estimated demand per capita values. The future PDDs and PHDs shown were computed from the projected ADDs and the existing system peaking factors shown in **Table 4-5**. The future demand projections are also shown with and without estimated reductions in water use from achieving WUE goals.

Table 4-7
Future Water Demand Projections

Description	Actual[1]			Projected						
	2007	2008 [2]	2009	2010	2011	2012	2013	2014	2015 (+6 yrs)	2029 (+20 yrs)
Population Data										
Water Service Area Population	892	972	985	1,004	1,023	1,042	1,062	1,082	1,103	1,435
Demand Basis Data (gal/day/capita)										
Avg Day Demand without WUE	87	77	82	85	85	85	85	85	85	85
Avg Day Demand with WUE				84	84	83	83	82	82	80
Average Day Demand (gpm)										
Demand without WUE	54	52	56	57	58	59	60	62	63	82
Demand with WUE				57	58	58	59	60	61	78
Maximum Day Demand (gpm)										
Demand without WUE	131	126	136	139	141	144	147	150	153	200
Demand with WUE				138	140	142	144	146	148	190
Peak Hour Demand (gpm)										
Demand without WUE	236	227	244	249	254	259	264	269	275	360
Demand with WUE				248	252	255	259	263	267	342

1 = 2007-2009 Maxium Day Demand and Peak Hour Demand values are based on actual average day demand amounts for the given year and a typical peaking factor, and does not necessarily represent the actual max day or peak hour demand for 2007-2009.
2 = The demands for 2008 are low which may be due to errors in supply quantities.

The analysis and evaluation of the existing water system with proposed improvements, as presented in **Chapters 7** and **9**, is based on the 2029 projected demand data without WUE reductions. This ensures that the future system will be sized properly to meet all requirements, whether or not additional water use reductions are achieved. However, the SITC will continue to pursue reductions in water use by implementing the WUE Program discussed earlier in this chapter**.**

Table 4-8 presents the existing and projected ERUs of the system. The ERU forecasts are based on the projected water demands from **Table 4-7** and the average demand per ERU that was computed from the actual 2007 through 2009 data (**Table 4-4**).

Table 4-8
Future ERU Projections

Description	Actual 2009	Projected 2015 (+ 6 yrs)	Projected 2029 (+ 20 yrs)
Demand Data (gpm)			
Avg Day Demand without WUE	56	63	82
ERU Basis Data (gal/day/ERU)			
Demand per ERU without WUE	167	167	167
Equivalent Residential Units (ERUs)			
Total System ERUs	482	540	708

Policies and Design Criteria

5

INTRODUCTION

The Swinomish Indian Tribal Community (SITC) operates and plans water service according to the design criteria, laws and policies that originate from the following eight sources, listed in descending order from those with the broadest to narrowest authority.

Table 5-1
Regulatory Agencies

Agency	Design Criteria/Laws/Policies
U.S. Department of Health and Human Services	Federal Regulations
U.S. Environmental Protection Agency	Federal Regulations
Swinomish Indian Tribal Senate	Tribal Regulations
Swinomish Utility Authority	Administrative Policies
Washington State Department of Health	State Regulations
Washington State Department of Ecology	State Regulations
Skagit County Council	County Regulations
American Water Works Association	Design Criteria

These laws, design criteria and policies guide the SITC's operation and maintenance of its water system on a daily basis, and its planning for growth and improvements. The overall objective of these regulations is to ensure that the SITC provides high-quality water service at a minimum cost to its customers. These regulations also set the standards that must be met to ensure that the water supply is adequate to meet existing and future water demands. The SITC system's ability to meet these demands is detailed in **Chapter 7,** and the recommended improvements for this system are identified in **Chapter 9**.

The SITC's policies take the form of ordinances, memoranda and operation procedures, many of which are summarized in this chapter.

The policies associated with the following categories are presented in this chapter:

- Supply;
- Customer Service;
- Facilities;
- Finance; and
- Organization.

SUPPLY POLICIES

Quality Protection

- The SITC shall pursue steps to meet or exceed all water quality laws and standards.
- The SITC shall take all reasonable measures to protect its system and customers.

Cross-Connection Control

- The SITC does not currently have a formal cross-connection control program, but they will strive to comply with the following guidelines and will move towards a formal program in the future.
- The SITC has a responsibility to protect the public water system from contamination due to cross-connections. Cross-connections that can be eliminated shall be eliminated.
- Cross-connections between the SITC's potable water system and a non-potable system shall be protected by SITC-approved backflow prevention assemblies to avoid contamination of the water quality.
- Backflow prevention assemblies, when required, shall be installed and maintained by the customer. Backflow prevention assemblies shall be inspected and tested upon installation, after any repairs, annually and when determined necessary by the SITC.
- Backflow prevention assembly tests shall be performed by a certified person and the results delivered to the SITC.
- If a customer fails to install the necessary backflow prevention devices, does not comply with testing requirements or does not repair faulty devices, the SITC shall terminate water service to that customer.

Quantity

- The SITC shall plan for at least a 20-year projected use of its supply sources so that future water resource limitations can be handled effectively.
- The SITC shall ensure that the capacity of the system, including pump stations, storage and transmission mains, is sufficient to meet the peak day demand of the system.

Fire Flow

- The SITC shall plan to provide the following minimum fire flows.

Forestry:	1,000 gpm for 2 hours duration
Rural Residential:	1,000 gpm for 2 hours duration
Urban Residential:	1,000 gpm for 2 hours duration
Swinomish Village (Fish Processing Plant):	2,750 gpm for 2 hours duration
Swinomish Village (Along Pioneer Parkway):	3,000 gpm for 3 hours duration
Swinomish Village (Other):	1,500 gpm for 2 hours duration

Water Use Efficiency

- The SITC shall promote the efficient and responsible use of water and shall conserve water during a water shortage.

Regional Participation

- The SITC voluntarily participates in the Skagit County Coordinated Water System Plan development process to promote regional cooperation and water service delivery efficiency.
- The SITC voluntarily participates in regional supply management and planning activities.
- The SITC shall strive to supply all customers within the SITC's water service area, unless a special agreement with an adjacent purveyor exists due to topography or other limiting factors.

CUSTOMER SERVICE POLICIES

Water Service and Connection

- The SITC shall strive to provide potable water service to all lands within the exterior boundaries of the Reservation and designated water service area, provided all policies related to service can be met.
- All proposed developments on the lands within the exterior boundaries of the Reservation and designated water service area shall connect directly to the SITC's water system, unless deemed unfeasible by the SITC at the time of the request.
- Water system extensions required to provide water service to proposed developments shall be approved by the Swinomish Utility Commission (Commission). Plans, specifications and hydraulic analysis shall be provided to the Swinomish Utility Authority (SUA) for review and approval. A Developer's Extension Agreement that outlines the responsibilities of the developer and the SUA must be entered into. An example is included in **Appendix G**. All costs of the extension shall be borne by the developer.
- Water service shall not be extended outside the lands within the exterior boundaries of the Reservation, unless requested by an adjacent purveyor and deemed feasible by the SITC.
- For water service applications on the lands within the exterior boundaries of the Reservation, the SITC shall review the availability for water service at the time of land use permit, site civil review and building permit. The SITC shall determine if water is available for the site and address the

sizing and looping of the water main. The complete process may take several months to complete.

- Water system capacity shall be evaluated at the time of water service application. The SITC shall use the capacity analysis contained in **Chapter 7** of this Water System Plan (WSP) to evaluate source of supply, storage and water rights capacity available to the applicant.
- Water system capacity, pressure and fire flow shall be considered when providing water availability information to applicants.
- Water availability shall expire at the time that the associated permit expires (e.g., land use, site civil or building permit).
- Time extensions with respect to water availability shall be granted in accordance with the associated permit requirements. When extensions are denied, the disputes shall be handled according to the rules guiding the associated permit process. Disputes can be brought to the Commission for discussion.
- Individual wells may be installed on existing platted lots within the SITC's service area if the SITC determines it is unfeasible to provide direct connection to the SITC water system at the time of the request. Owners of individual wells shall be required to connect to the SITC water system at the time SITC water becomes available.

Temporary Services

- No temporary service is allowed, unless there are plans for permanent water service that meets all SITC standards.

Emergency Service

- Compliance with standards may be temporarily deferred for emergency water service.
- Policy criteria may be waived for emergency service.

Planning Boundaries

- For planning purposes, the SITC shall use water service boundaries established by agreement as a result of the *Skagit County Coordinated Water System Plan*.

Satellite System Management

- The SITC shall consider providing satellite system management or ownership services within the SITC's existing service area.

FACILITY POLICIES

This section describes the planning criteria and policies used to establish an acceptable hydraulic behavior level and a standard of quality for the water system. Additional policies are contained in the SITC's Title 11, a copy of which is included in **Appendix G**.

Minimum Standards

- All proposed developments on lands within the exterior boundaries of the Reservation shall conform to the SITC's adopted design criteria, construction standards and specifications.
- Chapter 4 of the 2000 Skagit County Coordinated Water System Plan provides minimum design and performance specifications for existing and new utilities.

Pressure

- The SITC shall endeavor to maintain a minimum pressure of 40 pounds per square inch (psi) at customer meters during normal demand conditions, excluding a fire or emergency.
- The SITC shall endeavor to maintain a maximum pressure of 120 psi in the water mains during normal demand conditions, excluding pressure surges. Individual customers are responsible for reducing pressures over 80 psi.
- The SITC shall endeavor to maintain a minimum pressure of 30 psi at customer meters during all demand conditions, excluding a fire or other emergency.
- During fire conditions, the minimum pressure at customer meters and throughout the remainder of the system is 20 psi.
- During a failure of any part of the system, the maximum pressure shall not exceed 150 psi.

Velocities

- During normal demand conditions, the velocity of water in a water main should be less than 5 feet per second (fps).
- During emergency conditions such as fire, and for design purposes, the velocity of water in a water main may exceed 5 fps, but may not exceed 8 fps.

Storage

- Storage within the distribution system must be of sufficient capacity to supplement supply when system demands are greater than the supply capacity (equalizing storage), and still maintain sufficient storage for proper pump operation (operational storage), fire suppression (fire flow storage) and other emergency conditions (standby storage).
- Consolidated standby and fire flow storage must be located above the elevation that yields a 20 psi service pressure to all services in the zone. Sufficient standby storage shall be provided for an emergency condition in which a major supply source is out of service. The volume of storage shall be sufficient to maintain uninterrupted supply to the system during the emergency condition. Sufficient fire flow storage shall be provided for a fire condition equal to the system's maximum fire protection water demand and the required duration. The smaller of the two components may be excluded and nested within the larger storage component.
- The SITC shall have high-water level and low-water level alarms at the Main Booster Station.
- Storage facilities shall be located in areas where they shall satisfy the following requirements:
    1. Minimize fluctuations in system pressure during normal demands;

2. Maximize use of storage facilities during fires and peak demands; and
3. Improve the reliability of supply to the SITC.

Transmission and Distribution

- Where practical, transmission and distribution mains shall be looped to increase reliability and fire flow capacity and decrease head losses.
- All mains shall comply with the generally recognized design criteria from the AWWA and DOH guidelines that follow.

1. All new construction shall be in accordance with the SITC water system standards, a copy of which is included in **Appendix F** of this WSP and includes standards for the following:
    a. Minimum fire protection;
    b. Fire hydrants;
    c. Water pressure;
    d. Disinfection during construction;
    e. Water storage;
    f. Booster pumps;
    g. Valves;
    h. Air release and blow-off valves; and
    i. Pipe and fittings.
2. Distribution system design assumes that adequately sized service lines shall be used. All residential service lines shall be 1 inch or larger. Service lines shall be the same size as the meter or larger. All service lines shall include a curb stop prior to the meter.
3. The minimum diameter of distribution mains shall be 8 inches. Water mains not required to carry fire flow, as determined by the SUA, may be 6 inches in diameter. All water mains shall be C900 PVC, unless otherwise approved.
4. All new distribution mains shall be installed parallel to the centerline on the north or east sides of the street, wherever practical.
5. All new distribution mains shall be sized by hydraulic analysis.
6. All new mains providing fire flow shall be sized to provide the required fire flow at a minimum residual pressure of 20 psi and maximum pipeline velocity of 8 fps during peak day demand conditions. In general, new water mains that shall carry fire flow in residential areas shall be a minimum of 8 inches in diameter and looped for multi-family residential developments. New water mains in commercial, business park, industrial and school areas shall be a minimum of 12 inches in diameter and looped.
7. A minimum cover of 36 inches over the top of the pipe for transmission and distribution water mains shall be provided. A minimum cover of 18 inches over the top of the pipe for service water mains shall be provided.

8. Valve installations shall satisfy the following criteria.

    a. Zone valves shall be located at all pressure zone boundaries to allow future pressure zone realignment without the need for additional pipe construction.

    b. Isolation valves shall be installed in the lines to allow individual pipelines to be shut down for repair or installing services. Unless it is impractical to do so, the distance between isolation valves shall not exceed 800 feet in residential areas, 500 feet in commercial, industrial and multi-family areas, and 0.25 miles in arterial mains. A minimum of three valves shall be provided per cross and tee.

    c. Air/vacuum release valves shall be placed at all high points, or "crowns," in all pipelines.

    d. Blowoff assemblies shall be located at main dead ends where there is not a fire hydrant. If a water main extension is expected in the future, the blowoff assembly shall have a valve the same size as the main with concrete thrust blocking.

    e. Individual pressure reducing valves are encouraged in areas of high pressure. Areas of high pressure are typically those with a static water pressure of 80 psi or greater. Pressure reducing valves protect customers from high pressures in case a mainline pressure reducing station fails. Check valves must be installed in all new customer service lines. Check valves prevent hot water tanks from emptying into the SITC's distribution system when a nearby water main is empty or when the pressure in the main is less than the pressure in the tank. Check valves also prevent contamination of the system's mains caused by possible cross-connections in the customer's pipes or fixtures.

2. Fire hydrant installations shall satisfy the following criteria.

    a. Fire hydrants serving detached single-family or duplex dwellings on individual lots shall be located not more than 600 feet on center, such that all single-family lots are within 300 feet of a fire hydrant, as measured along the path of vehicular access.

    b. Fire hydrants serving any use other than detached single-family or duplex dwellings on individual lots shall be located not more than 300 feet on center, and shall be located so that at least one hydrant is located within 150 feet of all structures, but not closer than 50 feet, unless approved by the local fire department and SITC.

    c. Hydrants located in dead-end areas or cul-de-sacs shall service an area of no more than 120,000 square feet.

    d. One fire hydrant shall be installed per intersection.

    e. The local fire department shall review all proposed fire hydrant installations to ensure the correct number and spacing of fire hydrants for each project.

Supply and Booster Pump Stations

- All existing and future booster pump stations shall be modified/constructed to comply with the following minimum standards.
    1. All structures shall be non-combustible, where practical.
    2. All buildings shall have adequate heating, cooling, ventilation, insulation, lighting and work spaces necessary for on-site operation and repair.
    3. Sites shall be fenced to reduce vandalism and SITC liability, where appropriate.
    4. Each station shall be equipped with a flow meter and all necessary instrumentation to assist personnel in operating and troubleshooting the facility.
    5. Emergency power capability shall be provided to at least one booster pump station supplying each pressure zone, where practical.
- Pumps shall be operated automatically, with flexibility in pump start/stop settings.
- Stations shall be operated with the provision for at least two methods of control to minimize system vulnerability.
- Manual override of stations shall be provided for and located at the Main Booster Station and Field Superintendent's office using the SITC's telemetry and supervisory control system.
- Stations shall be monitored with alarms for the following conditions, where feasible.
    1. Pump started automatically or manually.
    2. Power phase failure.
    3. Communication failure.
    4. Water in structure.
    5. Low suction pressure.
    6. High discharge pressure or low flow.
- Stations shall have the following indicators.
    1. Local flow indication and totalizing.
    2. Flow indication and totalizing at the Field Superintendent's office.
    3. Recording of combined supply flow to the system.
- Booster pump stations shall be placed wherever necessary to fulfill the following criteria.
    1. Provide supply redundancy to a pressure zone.
    2. Improve the hydraulic characteristics of a pressure zone.
    3. Maximize storage availability and transmission capacity.
    4. Improve water quality (i.e., increase circulation) and quantity.

Pressure Reducing Stations

- All pressure reducing valves shall be placed in vaults that are large enough to provide ample workspace for field inspection and valve repair.
- Vaults shall drain to daylight or shall be equipped with sump pumps to prevent vault flooding.
- Pressure relief valves shall be provided on the low pressure side of the pressure reducing valves to prevent system overpressurizing in case of a pressure reducing valve failure.

Control

- The SITC's control system must be capable of efficiently operating the water system's components in accordance with this WSP, and in response to reservoir levels, system pressures, abnormal system conditions, electrical power rate structure and water costs.

Maintenance

- Facility and equipment breakdown is given the highest maintenance priority. Emergency repairs shall be made even if overtime labor is involved.
- Equipment shall be scheduled for replacement when it becomes obsolete and as funding is available.
- Worn parts shall be repaired, replaced or rebuilt before they represent a high probability of failure.
- Spare parts shall be stocked for all equipment items whose failure shall impact the ability to meet other policy standards.
- Equipment that is out of service shall be returned to service as soon as possible.
- A preventive maintenance schedule shall be established for all facilities, equipment and processes.
- Tools shall be obtained and maintained to repair all items whose failure shall impact the ability to meet other policy standards.
- Dry, heated shop space shall be available for maintenance personnel to maintain facilities.
- All maintenance personnel shall be trained to efficiently perform their job functions.
- Maintenance shall be performed by the water maintenance staff and supervised by the Utility Manager.
- Written records and reports showing operation and maintenance history shall be maintained on each facility and item of equipment.

Reliability

- Supply to the service area shall be pursued to meet peak day demand during a reasonable worst case supply system failure.
- System planning shall determine whether interties with adjacent systems shall be reliable or available for use at saturation development or emergency situations.

- System demand planning shall use historical demand data and assume all available land shall be developed at saturation.

Vulnerability

- Supply vulnerability analyses shall determine a reasonable worst case failure for the water system. The analyses shall consider the following conditions.
  1. Failure of the single largest source of supply.
  2. Reservoir out of service.
- Storage vulnerability analyses shall determine a worst case failure for the water system. The analyses shall consider:
  1. Peak day demand with simultaneous fire; and
  2. Peak hour demand with the largest source of supply out of service.

FINANCIAL POLICIES

General

- The Commission shall recommend and the Tribal Senate (Senate) shall approve rates on an annual basis, as applicable.
- Rates and additional charges established for the SITC should be:
  1. Cost-based rates that recover current, historical and future costs associated with the SITC's utility system and services;
  2. Equitable charges to recover costs from customers, commensurate with the benefits they receive; and
  3. Adequate and stable source of funds to cover the current and future cash needs of the SITC.
- Existing SITC customers shall pay the direct and indirect costs of operating and maintaining the facilities through user rates. In addition, the user rates shall include debt service incurred to finance the capital assets of the SITC.
- New customers seeking to connect to the water system shall be required to pay a capital contribution fee for an equitable share of the historical cost of the system and for the system's capital improvement program (CIP). Capital contribution fee revenues shall be used to fund the CIP in conjunction with rate revenue.
- The SITC shall maintain information systems that provide sufficient financial and statistical information to ensure conformance with rate setting policies and objectives and in a manner satisfactory to the Senate.
- User charges must be sufficient to provide cash for the expenses of operating and maintaining the system. To ensure the fiscal and physical integrity of the utility, an amount should be set aside each year and retained for capital expenditures that shall cover some portion of the depreciation of the physical plant.

- A Working Capital Reserve shall be maintained to cover unanticipated emergencies and fluctuations in cash flow.
- Water rates shall strive to equitably charge customers with different service requirements based on the cost of providing water service. Service requirements relate to the total volume of water used, peak rates of use and other factors.
- Fees and charges are calculated for each customer class for the service area as a whole. Rates shall be the same within the same customer class regardless of the existing customers' service locations.
- An annual budget shall be established by the Utility Commission that outlines the costs necessary for SUA operations, maintenance, capital improvements administration, debt service, personnel, liability and other insurance, replacement, operating reserve and lease payments for use of the SITC's resources and facilities.

Connection Charges

- Owners of properties that have not been assessed, have not been charged or have not borne an equitable share of the cost of the water system shall pay one or more of the following connection charges prior to connection to a water main.

  1. *Latecomers Fees:* Latecomers fees are negotiated with developers and property owners; they provide for the reimbursement of a pro rata portion of the original cost of the water system extensions and facilities.

  2. *Connection Charge:* The connection charge shall be assessed against any property that has not participated in the development of the water system. Meter charges, or hookup fees, are additional fees to recover the cost of meter and service line installation.

  3. *Developer Extension Charges:* These charges are for the administration, review and inspection of a developer extension project.

ORGANIZATIONAL POLICIES

- The Senate is the governing body of the SITC. The Senate shall have full plenary authority over the Utility Commission.
- The Utility Commission shall serve as the advisory and policy setting board of directors for the SUA. The Utility Commission shall operate as a subordinate unit of the Senate, independent in its operation, but responsible to the Senate for its actions.
- The SUA has the authority to provide utility services on the lands within the exterior boundaries of the Reservation. The SUA also has the responsibility of operating, providing and maintaining the SITC utilities.

Water Source and Quality

6

INTRODUCTION

The two basic objectives of a water system are to provide a sufficient quantity of water to meet customer usage demands and to provide high quality water. **Chapter 7** discusses the Swinomish Indian Tribal Community's (SITC) ability to supply a sufficient quantity of water and identifies future source requirements. This chapter discusses the SITC's existing water sources, water rights, water quality regulations and water quality monitoring results.

EXISTING WATER SOURCES AND TREATMENT

Water Sources

The SITC purchases its water supply from the City of Anacortes (Anacortes). In addition, the SITC owns two emergency groundwater wells, Wells 2 and 3, which it uses to supplement supply from the City. Additional information on each of the SITC's existing sources is presented in **Chapter 2** and contained in **Appendix B**.

Water Treatment

The SITC purchases treated water from Anacortes. This water originates from the Skagit River and is filtered and chlorinated by Anacortes. The SITC further treats this water by fluoridating it at its Main Booster Pump Station. The average fluoride concentration within the distribution system was measured at 0.7 mg/L. A small percentage of SITC residences are located upstream of the Main Booster Pump Station and do not receive fluoridated water.

The two emergency groundwater wells are chlorinated whenever they operate in order to provide disinfection and match the free chlorine residual of the City's supply.

WATER RIGHTS

Overview

The SITC currently obtains a majority of its water from Anacortes through an intertie agreement. The City of Anacortes Comprehensive Water System Plan describes the quantity and quality characteristics of the Skagit River surface water source and analyzes the adequacy of Anacortes' water rights to meet existing and future demands, which include delivery of water to the SITC.

The water rights discussion contained herein is limited to water that is used for out-of-stream uses on lands within the exterior boundaries of the Swinomish Reservation (Reservation). There is no discussion in this document of any water rights held by the SITC for instream uses whether on or off the Reservation. Nothing in this document should be construed as limiting the extent of the SITC's water rights. The SITC's water rights can only be determined through negotiation or general water rights adjudication.

When the Swinomish Reservation was created by the Point Elliot Treaty of 1855, a sufficient, but unquantified, volume of water was automatically reserved to fulfill the purposes of the Reservation.

This type of water has come to be known through case law as a federal reserved water right. Federal reserved water rights have a priority date that matches the date of creation of the Reservation. So, the federal reserved water right for the Swinomish Reservation has a priority date of 1855. Federal reserved water rights are different from state-based water rights in a number of ways:

1. There is no due diligence standard for development of a federal reserved water right.
2. The SITC does not need to seek approval from the State of Washington before it starts to beneficially use federal reserved water.
3. The SITC does not need to seek approval from the State of Washington if it makes changes to how it captures or uses federal reserved water.

In addition to the SITC's federal reserved water right, the SITC can also obtain water rights issued by the State of Washington, as can any other entity within the state. The SITC has obtained ownership of state-issued ground water permit G1-23501P. This permit was originally issued to Kwonesum Associates for community domestic supply to serve 24 homes.

The SITC currently operates a regional water system, which is supplied with water from Anacortes and has two emergency backup wells. In addition, the SITC operates three satellite systems. The three satellite systems are referred to as the Casino Satellite, the North Satellite and the Kwonesum Satellite.

Existing Water Rights and Water Supplies

For out-of-stream, on-reservation uses, the SITC currently holds its unquantified federal reserved water right and one state-issued water right permit, and it receives water from Anacortes. A summary of these water rights and water supplies is presented in **Table 6-1**.

Regional System

The primary sources of supply for the regional water system (EPA# PWS10530032) are the physical interties with Anacortes. Under the 1996 Memorandum of Agreement Regarding Utilization of the Skagit River Basin Water Resources for Instream and Out of Stream Purposes (MOA), Anacortes has agreed to make available 2.8 MGD (equivalent to 1,945 gpm) of water to the SITC. This water is supplied to the SITC through any of the five interties with the Anacortes water line as it runs through the Reservation adjacent to State Route 20. The MOA is a 50-year agreement that will not expire until 2046, which is beyond the planning horizon for this document. In addition, the SITC entered into a Water Supply Agreement with Anacortes on January 1, 2006, and this document is included in **Appendix D**. This water supply agreement secured a supply of 42.0 million gallons (128.9 acre-feet per year) of water annually from Anacortes for the SITC.

In case of a disruption in service from Anacortes, the SITC maintains two emergency backup wells (Wells 2 and 3) that are capable of pumping water into the regional system at a combined rate of 85 gpm. The water right utilized for these two wells is a portion of the SITC's unquantified federal reserved water right.

Satellite Systems

Casino Satellite

The Casino Satellite has physical interties with Anacortes for its domestic supply and fire protection. It is considered a satellite system because its intertie is exclusive to the casino property, the SITC's Chevron gas station and a private retail store (Salish Trust Trading Post) and it is not connected to

the remainder of the SITC regional system. Since the water for this system is provided by Anacortes, any water used is debited against the rate and volume allowed in the agreements between Anacortes and the SITC as described above.

North Satellite

The North Satellite system (EPA# PWS105300118) has one well source. The well can pump up to 36 gpm and currently serves 3 connections and has the capacity to serve up to 8 connections. The water right utilized for this system is a portion of the SITC's unquantified federal reserved water right. Historically, the water system name was Cliff Skelton Water System (DOH Water System ID 04366).

Kwonesum Satellite

The Kwonesum Satellite water system (EPA# PWS105300117) was originally created by a private developer (Kwonesum Associates – Kirby Johnson) that obtained a water right permit from the Washington State Department of Ecology (Ecology). The limitations on water right permit G1-23501P are that it was to serve 24 connections, at the rates of 20 gpm and 12 acre-feet per year. In April 2005, the SITC obtained ownership of the water system and began to provide satellite management services for it. The well can pump up to 30 gpm and currently serves 14 connections. The water rights utilized for this system include the water right permit that was originally granted to Kwonesum Associates and was assigned to the SITC in March 2009. A portion of SITC's unquantified federal reserved water rights may be used for the Kwonesum Satellite if the uses from this well exceed the limitations on the state-issued water right permit or it may be used instead of utilizing the state-issued water right permit in its entirety. The Kwonesum Satellite will be converted to a Group A water system in 2011. The DOH Water System ID for this system before it was taken over by the SITC was 61426.

Additional water rights information for each source may be found on groundwater permit G1-23501P, the 1996 MOA and the 2006 water supply agreement. The groundwater permit is included in **Appendix H** and the MOA and water supply agreements are included in **Appendix D**.

Table 6-1
Existing Water Rights

Source Name	Water Right	Priority Date	Primary or Supplemental Right/Source	Use	Existing Water Rights/Sources			
					Instantaneous		Annual	
					(gpm)	(cfs)	(acre-ft)	(gpm)
City of Anacortes[1,2,3]	NA - Intertie	NA	Primary	Permanent	1,944	4.3	129	80
Kwonesum Satellite[4]	G1-23501P	11/5/1979	Primary	Permanent	20	0.0	12	7
Kwonesum Satellite[4]	Federal Reserved Water Right[6]	1/22/1855	Primary	Permanent	10	0.0	16	9
North Satellite (Cliff Skelton Well)[5]	Federal Reserved Water Right[6]	1/22/1855	Primary	Permanent	36	0.1	58	35
Regional System (Well 2 and Well 3)	Federal Reserved Water Right[6]	1/22/1855	Primary	Emergency Backup	275	0.6	444	275
			Total		2,285	5.1	659	406

1 = City of Anacortes has agreed to make available 2.8 MGD for the SITC per the 1996 MOA.
2 = City of Anacortes has agreed to make available 42.0 MG on an annual basis for the SITC per the 2006 Water Supply Agreement.
3 = The Casino Satellite system is supplied entirely through an intertie with the City of Anacortes.
4 = The Kwonesum Satellite Water System was historically identified as WADOH Water System ID 61426.
5 = The North Satellite Water System was historically identified as WADOH Water System ID 04366.
6 = The SITC's federal reserved water right is unquantified. The instantaneous rates identified in this table represent the physical capacity of the currently installed pumps. The annual volume is the maximum volume of water that could be pumped at the instantaneous rate. These limits are based on currently installed infrastructure and should not be considered a limit of the federal reserved water right.

Water Supply Evaluation

An evaluation of the SITC's existing water supply was performed to determine the sufficiency of the supply to meet both existing and future water demands. This analysis is related to the physical capacity of the infrastructure within the maximum limits described in the preceding section. **Table 6-2** compares the combined maximum instantaneous water supply amounts of the sources for the regional system with the peak day demand of the system and the combined maximum annual water supply of the sources for the regional system with the average day demand of the system. Since the City of Anacortes agreement also applies to the Casino satellite, the 2009 demand for the Casino satellite is included in the table. As shown in the table, the SITC has sufficient water supply (both instantaneous and annual amounts) to meet the demands of its existing customers.

Table 6-3 summarizes the results of the future water supply evaluation, which compares the water supply of the existing sources with the system's future 6-year and 20-year demand projections. The analysis considered future demand projections without water use reductions from the SITC's planned water use efficiency efforts, as shown in the table. Since a future water demand projection for the Casino satellite is unavailable, the existing (2009) water demand for the Casino satellite was assumed for the future 6-year and 20-year demand projections for the Casino satellite. The results of the future water supply evaluation indicate the SITC has sufficient water supply to meet demands well beyond the year 2029.

Table 6-2
Existing Water Supply Evaluation

Description	Instantaneous Rate/ Peak Day Demand (gpm)	Annual Rate/ Average Day Demand (acre-feet)	Annual Rate/ Average Day Demand (gpm)
City of Anacortes Intertie	1,944	129	80
Current Development of Federal Reserved Rights	275	444	275
Existing (2009) Regional Water Demand	136	90	56
Existing (2009) Casino Satellite Water Demand	41	27	17
Surplus (or Deficient) Supply	2,043	455	282

Table 6-3
Future Water Supply Evaluation

Description	Instantaneous Rate/ Peak Day Demand (gpm)	Annual Rate/ Average Day Demand (acre-ft)	Annual Rate/ Average Day Demand (gpm)
Year 2015 Without Water Use Efficiency Measures			
City of Anacortes Intertie	1,944	129	80
Current Development of Federal Reserved Rights	275	444	275
Projected (2015) Regional Water Demand	153	101	63
Projected (2015) Casino Satellite Water Demand[1]	41	27	17
Surplus (or Deficient) Supply	2,026	444	275
Year 2029 Without Water Use Efficiency Measures			
City of Anacortes Intertie	1,944	129	80
Current Development of Federal Reserved Rights	275	444	275
Projected (2029) Regional Water Demand	200	133	82
Projected (2029) Casino Satellite Water Demand[1]	41	27	17
Surplus (or Deficient) Supply	1,978	412	256

1 = The existing (2009) Casino satellite water demand was assumed for the projected Casino satelllite water demands.

Water Supply Planning

Although the SITC has sufficient water available to supply the water system through 2029 and likely beyond, additional supply quantity negotiations with Anacortes may be necessary if the SITC plans to continue using the Anacortes intertie as the primary source of supply for average day demand. By 2015, the projected average day demand will exceed the amount available to the SITC from the City of Anacortes based on the 2006 Water Supply Agreement. This contract is updated bi-annually and the SITC can increase the committed volume available from Anacortes.

The SITC will strive to use its existing water sources efficiently by continuing to support the water use efficiency measures outlined in **Chapter 4**. In addition, the SITC will accomplish the proposed improvements identified in **Chapter 9** to fully utilize each source's capacity and to provide additional redundancy for the existing supply sources.

LONG-TERM WATER SUPPLY PLANNING

The SITC water system currently has one intertie agreement and five metered connections with Anacortes. Future demand will be met through continued development of the SITC's federal reserved water right and negotiations with Anacortes for additional supply.

DRINKING WATER REGULATIONS

Overview

The quality of drinking water in the United States is regulated by the Environmental Protection Agency (EPA). Under provisions of the Safe Drinking Water Act (SDWA), the EPA is allowed to delegate primary enforcement responsibility for water quality control to each state. In the State of Washington, DOH is the generally the agency responsible for implementing and enforcing drinking water regulations. For the State of Washington to maintain primacy (delegated authority to implement requirements) under the SDWA, the state must adopt drinking water regulations that are at least as stringent as the federal regulations. In meeting these requirements, the state, in cooperation with the EPA, has published drinking water regulations that are contained in Washington Administrative Code (WAC) Chapter 246-290. As a Tribal Community, the SITC's water quality is regulated directly by the EPA and not DOH.

Existing Regulations

The SDWA was enacted in 1974 as a result of public concern about water quality. The SDWA sets standards for the quality of drinking water and requires water treatment if these standards are not met. The SDWA also sets water testing schedules and methods that water systems must follow. In 1986, the SDWA was amended as a result of additional public concern and frequent contamination of groundwater from industrial solvents and pesticides. The 1986 amendments require water systems to monitor and treat for a continuously increasing number of water contaminants identified in the new federal regulations. The EPA regulated approximately 20 contaminants between 1974 and 1986. The 1986 amendments identified 83 contaminants that the EPA was required to regulate by 1989. Implementation of the new regulations has only been marginally successful due to the complexity of the regulations and the associated high costs. To rectify the slow implementation of the new regulations, the SDWA was amended again and re-authorized in August of 1996.

In response to the 1986 SDWA amendments, the EPA established six rules known as the Phase I Rule, the Phase II and IIb Rules, the Phase V Rule, the Surface Water Treatment Rule, the Total Coliform Rule, and the Lead and Copper Rule. The EPA regulates most chemical contaminants through the Phase I, II, IIb and V Rules. Additional drinking water regulations have been published since these six rules were first established and the EPA is continually proposing new rules for promulgation. The SITC's currently active sources are affected by many of these current rules.

The EPA set two limits for each contaminant that is regulated under the rules. The first limit is a health goal, referred to as the Maximum Contaminant Level Goal (MCLG). The MCLG is zero for many contaminants, especially known cancer-causing agents (carcinogens). The second limit is a legal limit, referred to as the Maximum Contaminant Level (MCL). The MCLs are equal to or higher

than the MCLGs. However, most MCLs and MCLGs are the same, except for contaminants that are regulated as carcinogens. The health goals (MCLGs) for these are typically zero because they cause cancer and it is assumed that any amount of exposure may pose some risk of cancer. A summary of each rule follows.

To fully understand the discussion that follows, brief definitions of several key terms are provided below.

- Organic chemicals – Animal or plant produced substances containing carbon and other elements such as hydrogen and oxygen.
- Synthetic organic chemicals (SOCs) – Man-made organic substances, including herbicides, pesticides, and various industrial chemicals and solvents.
- Volatile organic chemicals (VOCs) – Chemicals, as liquid, that evaporate easily into the air.
- Inorganic chemicals – Chemicals of mineral origin that are naturally occurring elements. These include metals such as lead and cadmium.

Phase I Rule

The Phase I Rule, which was the EPA's first response to the 1986 amendments, was published in the Federal Register on July 8, 1987, and became effective on January 9, 1989. This rule provided limits for eight VOCs that may be present in drinking water. VOCs are used by industries in the manufacturing of rubber, pesticides, deodorants, solvents, plastics and other chemicals. VOCs are found in everyday items such as gasoline, paints, thinners, lighter fluid, mothballs and glue, and are typically encountered at dry cleaners, automotive service stations and elsewhere in industrial processes. The SITC currently complies with all contaminant monitoring requirements under this rule.

Phase II and IIb Rules

The Phase II and IIb Rules were published in the Federal Register on January 30, 1991, and July 1, 1991, and became effective on July 30, 1992, and January 1, 1993, respectively. These rules updated and created limits for 38 contaminants (organics and inorganics), of which 27 were newly regulated. Some of the contaminants are frequently applied agricultural chemicals (nitrate), while others are more obscure industrial chemicals. The SITC currently complies with all contaminant monitoring requirements under this rule.

Phase V Rule

The Phase V Rule was published in the Federal Register on July 17, 1992, and became effective on January 17, 1994. This rule set standards for 23 additional contaminants, of which 18 are organic chemicals (mostly pesticides and herbicides) and five are inorganic chemicals (such as cyanide). The SITC currently complies with all contaminant monitoring requirements under this rule.

Surface Water Treatment Rule

The Surface Water Treatment Rule (SWTR) was published in the Federal Register on June 29, 1989, and became effective on December 31, 1990. Surface water sources, such as rivers, lakes and reservoirs (which are open to the atmosphere and subject to surface runoff), and groundwater sources that are under the direct influence of surface water (referred to as GWI sources), are governed by this rule. The SWTR seeks to prevent waterborne diseases caused by the microbes *Cryptosporidium, Legionella* and *Giardia lamblia*, which are present in most surface waters. The rule

requires disinfection of all surface water sources and GWI sources. All surface water sources and GWI sources must also be filtered, unless a filtration waiver is granted. A filtration waiver may be granted to systems with pristine sources that continuously meet stringent source water quality and protection requirements. The SITC does not currently have any sources that are classified as surface water or GWI; therefore, this rule does not currently affect the SITC. The SITC purchases most of its water from Anacortes. Anacortes provides treated water withdrawn from the Skagit River and complies with this rule.

Interim Enhanced Surface Water Treatment Rule

The EPA proposed the Interim Enhanced Surface Water Treatment Rule (IESWTR) on July 29, 1994. The final rule was published in the Federal Register on December 16, 1998, and became effective on February 16, 1999, concurrent with the Stage 1 Disinfectants/Disinfection By-products Rule. The rule primarily applies to public water systems that serve 10,000 or more people and use surface water or GWI sources. The rule also requires primacy agencies (i.e., DOH in Washington State) to conduct sanitary surveys of all surface water and GWI systems, regardless of size. The rule is the first to directly regulate the protozoan *Cryptosporidium* and has set the MCLG for *Cryptosporidium* at zero. Water systems affected by this rule needed to comply with it by December 16, 2001. The SITC does not currently have any sources that are classified as surface water or GWI; therefore, this rule does not currently affect the SITC.

Long Term 1 Enhanced Surface Water Treatment Rule

This is the follow-up rule to the IESWTR, which became effective in December of 1998. The final Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) was published on January 14, 2002, and became effective February 13, 2002. The rule addresses water systems using surface water or groundwater under the direct influence of surface water serving fewer than 10,000 people. The rule extends protections against *Cryptosporidium* for smaller water systems. The SITC does not currently have any sources that are classified as surface water or GWI; therefore, this rule does not currently affect the SITC.

Total Coliform Rule

The Total Coliform Rule was published in the Federal Register on June 29, 1989, and became effective on December 31, 1990. The rule set both health goals (MCLGs) and legal limits (MCLs) for total coliform levels in drinking water, and the type and frequency of testing that is required for water systems. The rule requires more monitoring than prior requirements, especially for small systems. In addition, every public water system is required to develop a coliform monitoring plan, subject to approval by DOH or the EPA.

Coliform is a group of bacteria, some of which live in the digestive tract of humans and many animals, and is excreted in large numbers with feces. Coliform can be found in sewage, soils, surface waters and vegetation. The presence of any coliform in drinking water indicates a potential health risk and potential waterborne disease outbreak, which may include gastroenteric infections, dysentery, hepatitis, typhoid fever, cholera and other infectious diseases.

The Total Coliform Rule establishes the health goal for total coliform at zero. To comply with the legal limit, systems may not find coliform in more than 5 percent of the samples taken each month. For systems like the SITC's that must take one sample per month, one sample that contains coliform would exceed the legal limit and trigger the follow-up sampling requirements. Since less than five samples are collected per month, a sanitary survey is required every 5 years and the most

recent survey was completed in June 2008. A copy of the SITC's coliform monitoring plan is contained in **Appendix I**.

Lead and Copper Rule

The Lead and Copper Rule was published in the Federal Register on June 7, 1991, and became effective on December 7, 1992. On January 12, 2000, the EPA published minor revisions to the rule in the Federal Register, which primarily improved the implementation of the rule. On June 29, 2004, additional minor revisions and clarifications of several requirements of the Lead and Copper Rule were published by the EPA. The rule identifies action levels for both lead and copper. An action level is different from an MCL. An MCL is a legal limit for a contaminant, and an action level is a trigger for additional prevention or removal steps. The action level for lead is greater than 0.015 mg/L. The action level for copper is greater than 1.3 mg/L. If the 90^{th} percentile concentration of either lead or copper from the group of samples exceeds these action levels, a corrosion control study must be undertaken to evaluate strategies and make recommendations for reducing the lead or copper concentration to below the action levels. The rule requires systems that exceed the lead level to educate the affected public about reducing its lead intake. Systems that continue to exceed the lead action level after implementing corrosion control and source water treatment may be required to replace piping in the system that contains lead sources. Corrosion control is typically accomplished by increasing the pH of the water to make it less corrosive, which reduces its ability to break down water pipes and absorb lead or copper.

Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery, porcelain, pewter, brass and water. Lead can pose a significant health risk if too much of it enters the body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Lead can slow normal mental and physical development of growing bodies.

Copper is a common, natural and useful metal found in our environment. It is also a trace element needed in most human diets. The primary impact of elevated copper levels in water systems is stained plumbing fixtures. At certain levels (well above the action levels), copper may cause nausea, vomiting and diarrhea. It can also lead to serious health problems in people with Wilson's disease. Long-term exposure to elevated levels of copper in drinking water could also increase the risk of liver and kidney damage. The SITC currently complies with all contaminant monitoring and treatment requirements under this rule.

Radionuclides Rule

The EPA established interim drinking water regulations for radionuclides in 1976 under the SDWA. MCLs were established for alpha, beta and photon emitters, and radium 226/228. Radionuclides are elements that undergo a process of natural decay and emit radiation in the form of alpha or beta particles and gamma photons. The radiation can cause various kinds of cancers, depending on the type of radionuclide exposure from drinking water. The regulations address both man-made and naturally occurring radionuclides in drinking water.

The 1986 amendments to the SDWA finalized the regulations for radionuclides by eliminating the term "interim." The amendments also directed the EPA to promulgate health-based MCLGs, as well as MCLs. The EPA failed to meet the statutory schedules for promulgating the radionuclide regulations, which resulted in a lawsuit. In 1991, the EPA proposed revisions to the regulations but a final regulation based on the proposal was never promulgated. The 1996 amendments to the SDWA

directed the EPA to revise a portion of the earlier proposed revisions, adopt a schedule, and review and revise the regulations every 6 years, as appropriate, to maintain or improve public health protection. Subsequent to the 1996 amendments, a 1996 court order required the EPA to either finalize the 1991 proposal for radionuclides or to ratify the existing standards by November 2000.

The final rule was published in the Federal Register on December 7, 2000, and became effective on December 8, 2003. The rule established an MCLG of zero for the four regulated contaminates and MCLs of 5 pCi/L for combined radium-226 and radium-228, 15 pCi/L for gross alpha (excluding radon and uranium), 4 mrem/year for beta particle and photon radioactivity and 30 ug/L for uranium. The SITC currently complies with all contaminant monitoring requirements under this rule.

Wellhead Protection Program

Section 1428 of the 1986 SDWA amendments mandates that each state develop a wellhead protection program. The Washington State mandate for wellhead protection and the required elements of a wellhead protection program are contained in WAC 246-290-135, Source Protection, which became effective in July of 1994. In Washington State, DOH is the lead agency for the development and administration of the state's wellhead protection program.

A wellhead protection program is a proactive and ongoing effort of a water purveyor to protect the health of its customers by preventing contamination of the groundwater that it supplies for drinking water. All federally defined Group A public water systems that use groundwater as their source are required to develop and implement a wellhead protection program. All required elements of a local wellhead protection program must be documented and included in either the Comprehensive Water System Plan (applicable to the SITC) or a Small Water System Management Program document (not applicable to the SITC). A copy of the SITC's Wellhead Protection Program is contained in **Appendix J**.

Consumer Confidence Report

The final rule for the Consumer Confidence Report (CCR) was published in the Federal Register on August 19, 1998, and became effective on September 18, 1998. Minor revisions were posted in the Federal Register on May 4, 2000. The CCR is the centerpiece of the right-to-know provisions of the 1996 amendments to the SDWA. All community water systems, like the SITC, were required to issue the first report to customers by October 19, 1999. The annual report must be updated and re-issued to all customers by July 1st of each year thereafter.

The CCR is a report on the quality of water that was delivered to the system during the previous calendar year. The reports must contain certain specific elements but may also contain other information that the purveyor deems appropriate for public education. Some, but not all, of the information that is required in the reports includes the source and type of the drinking water, type of treatment, contaminants that have been detected in the water, potential health effects of the contaminants, identification of the likely source of contamination, violations of monitoring and reporting, and variances or exemptions to the drinking water regulations. A copy of the SITC's latest CCR is contained in **Appendix K**.

Stage 1 Disinfectants/Disinfection By-products Rule

Disinfection by-products (DBPs) are formed when free chlorine reacts with organic substances, most of which occur naturally. These organic substances (called precursors) are a complex and variable mixture of compounds. The DBPs themselves may pose health risks. Trihalomethanes are a

category of DBPs that had been regulated previous to this rule. However, systems with groundwater sources that serve a population of less than 10,000 were not previously required to monitor for trihalomethanes.

The EPA proposed the Stage 1 Disinfectants/Disinfection By-products Rule (D/DBPR) on July 29, 1994. The final rule was published in the Federal Register on December 16, 1998, and became effective on February 16, 1999. The rule applies to the site and most other water systems, including systems serving fewer than 10,000 people, that add a chemical disinfectant to the drinking water during any part of the treatment process. The rule reduced the MCL for total trihalomethanes, which are a composite measure of four individual trihalomethanes, from the previous interim level of 0.10 mg/L to 0.08 mg/L. The rule established MCLs and requires monitoring of three additional categories of DBPs (0.06 mg/L for five haloacetic acids, 0.01 mg/L for bromate, and 1.0 mg/L for chlorite). The rule established maximum residual disinfectant levels for chlorine (4.0 mg/L), chloramines (4.0 mg/L) and chlorine dioxide (0.8 mg/L). The rule also requires systems using surface water or groundwater directly influenced by surface water to implement enhanced coagulation or softening to remove DBP precursors, unless alternative criteria are met. Compliance with this rule must have been satisfied by December 16, 2001, for large surface water systems (those serving over 10,000 people) and by December 16, 2003, for smaller surface water systems and all groundwater systems, including the SITC. The SITC currently complies with all contaminant monitoring requirements under this rule.

Unregulated Contaminant Monitoring Regulation

The EPA established the Unregulated Contaminant Monitoring Regulation (UCMR) to generate data on contaminants that are being considered for inclusion in new drinking water standards. The information collected by select public water systems will ensure that future regulations established by the EPA are based on sound science. The rule was first published in the Federal Register on September 17, 1999, and was subsequently amended on March 2, 2000, and January 11, 2001. The UCMR became effective on January 1, 2001.

Three separate lists of unregulated contaminants are maintained under the UCMR: List 1, List 2 and List 3. Contaminants are organized on the tiered lists based on the availability of standard testing procedures and the known occurrence of each contaminant, with List 1 containing contaminants that have established standard testing procedures and some, but insufficient, information on their occurrence in drinking water. Monitoring for contaminants on the three lists is limited to a maximum of 30 contaminants within a 5-year monitoring cycle, and the EPA is required to publish new contaminant monitoring lists every 5 years. As new lists are published, contaminants will be moved up in the lists if adequate information is found to support additional monitoring. All public water systems serving more than 10,000 people and a randomly selected group of smaller water systems are required to monitor for contaminants. The SITC currently monitors for some unregulated contaminants.

Arsenic

The EPA established interim drinking water regulations for arsenic in 1976 under the SDWA. Arsenic is highly toxic, affects the skin and nervous system, and may cause cancer. The 1996 SDWA amendments require the EPA to conduct research to assess health risks associated with exposure to low levels of arsenic. The EPA issued a proposed regulation on June 22, 2000, and allowed a 90-day public review period. The final rule, which was published in the Federal Register on January 22, 2001, was to become effective on March 23, 2001, except for certain amendments to several sections

of the rule. However, because of the national debate regarding the science and costs related to the rule, the EPA announced on May 22, 2001, that it was delaying the effective date for the rule to allow time to reassess the rule and to afford the public a full opportunity to provide further input. On October 31, 2001, the EPA reaffirmed the final rule as published on January 22, 2001. The Arsenic Rule subsequently became effective on February 22, 2002.

The rule sets the MCLG of arsenic at zero and reduces the MCL from the previous standard of 0.05 mg/L to 0.01 mg/L. Arsenic's monitoring requirements will be consistent with the existing requirements for other inorganic contaminants. The SITC complies with all contaminant monitoring requirements under this rule.

Filter Backwash Recycling Rule

The 1996 SDWA amendments required the EPA to promulgate a regulation governing the recycling of filter backwash water within public water system treatment processes. Public water systems using surface water or groundwater under the direct influence of surface water that utilize filtration processes and recycling must comply with this rule. The rule aims to reduce risks associated with recycling contaminants removed during filtration. The EPA issued a proposed regulation on June 22, 2000, and allowed a 90-day public review period. The final rule was published in the Federal Register on June 8, 2001, and became effective on August 7, 2001.

The rule requires filter backwash water be returned to a location that allows complete treatment. The SITC does not currently recycle filter backwash water in any treatment process. Therefore, this rule does not currently affect the SITC.

Stage 2 Disinfectants/Disinfection By-products Rule

This rule is the second part of the Disinfectants/Disinfection By-products Rule, of which Stage 1 D/DBPR became effective in February 1999. The Stage 2 Disinfectants/Disinfection By-products Rule (Stage 2 D/DBPR) was published on January 4, 2006, in the Federal Register and became effective on March 6, 2006. The EPA implemented this rule simultaneously with the Long Term 2 Enhanced Surface Water Treatment Rule.

Similar to the Stage 1 D/DBPR, this rule applies to most water systems that add a disinfectant to the drinking water other than ultraviolet light and those systems that deliver such water. The Stage 2 D/DBPR changes the calculation procedure requirement of the MCLs for two groups of disinfection by-products, total trihalomethanes and haloacetic acids (TTHM and HAA5). The rule requires each sampling location to determine compliance with MCLs based on its individual annual average DBP levels (termed the Locational Running Annual Average), rather than utilizing a system-wide annual average. The rule also proposes new MCLGs for chloroform (0.07 mg/L), trichloroacetic acid (0.02 mg/L, and monochloroacetic acid (0.03 mg/L).

Additionally, the rule requires systems to document peak DBP levels and prepare an Initial Distribution System Evaluation (IDSE) to identify Stage 2 D/DBPR compliance monitoring sites. IDSEs require each water system to prepare a separate IDSE plan and report, with the exception of those systems that obtain a 40/30 Certification or a Very Small System Waiver. In order to qualify for the 40/30 Certification, all samples collected during Stage 1 monitoring must have TTHM and HAA5 levels less than or equal to 0.040 mg/L and 0.030 mg/L, respectively. The first stage of the IDSE schedule required systems serving 100,000 or more people to submit IDSE plans by October 1, 2006. Systems serving 50,000 to 99,999 people had to submit IDSE plans by April 1, 2007, while systems serving 10,000 to 49,999 people had to submit plans by October 1, 2007. Systems serving fewer than 10,000 people were required to submit an IDSE plan by April 1, 2008, if they did not

qualify for 40/30 Certification or a Very Small System Waiver. The SITC currently complies with all contaminant monitoring requirements under this rule and has completed its IDSE plan, which is included in **Appendix I**.

Long Term 2 Enhanced Surface Water Treatment Rule

Following the publishing of the Interim Enhanced Surface Water Treatment Rule, the EPA introduced the Long Term 1 Enhanced Surface Water Treatment Rule to supplement the preceding regulations. The second part of the regulations of the Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR), which became effective in February 2002, is mandated in the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR). The final rule was published in the Federal Register on January 5, 2006, and became effective on March 6, 2006. The final rule was implemented simultaneously with the Stage 2 D/DBPR described in the previous section. This rule applies to all systems that use surface water or GWI sources.

This rule establishes treatment technique requirements for filtered systems based on their risk level for contamination, calculated from the system's average *Cryptosporidium* concentration. Requirements include up to 2.5-log *Cryptosporidium* treatment in addition to existing requirements under the IESWTR and LT1ESWTR. Filtered systems that demonstrate low levels of risk will not be required to provide additional treatment. Unfiltered systems under this rule must achieve at least a 2-log inactivation of *Cryptosporidium* if the mean level in the source water remains below 0.01 oocysts/L. If an unfiltered system's mean level of *Cryptosporidium* exceeds 0.01 oocysts/L, the LT2ESWTR requires the system to provide a minimum 3-log inactivation of Cryptosporidium. All unfiltered systems are also required to utilize a minimum of two disinfectants in their treatment process.

The LT2ESWTR also addresses systems with unfinished water storage facilities. Under this rule, systems must either cover their storage facilities or achieve inactivation and/or removal of 4-log virus, 3-log *Giardia lamblia* and 2-log *Cryptosporidium* on a state-approved schedule. Lastly, the rule extends the requirement of the disinfection profiles mandated under the LT1ESWTR to the proposed Stage 2 D/DBPR. Since this rule applies only to systems that use surface water or GWI sources, it does not impact the SITC.

Groundwater Rule

The EPA promulgated the Groundwater Rule (GWR) to reduce the risk of exposure to fecal contamination that may be present in public water systems that use groundwater sources. The GWR also specifies when corrective action (which may include disinfection) is required to protect consumers who receive water from groundwater systems from bacteria and viruses. The GWR applies to public water systems that use groundwater and to any system that mixes surface and groundwater if the groundwater is added directly to the distribution system and provided to consumers without treatment equivalent to surface water treatment. The final rule was published in the Federal Register on November 8, 2006, and became effective on January 8, 2007.

The rule targets risks through an approach that relies on the following four major components.

1. Periodic sanitary surveys of groundwater systems that require the evaluation of eight critical elements and the identification of significant deficiencies (such as a well located near a leaking septic system). States must complete the initial survey for most community water systems by December 31, 2012, and for community water systems with outstanding performance and all non-community water systems by December 31, 2014.

2. Source water monitoring to test for the presence of E. coli, enterococci or coliphage in the sample. There are two monitoring provisions.
    - Triggered monitoring for systems that do not already provide treatment that achieves at least 99.99 percent (4-log) inactivation or removal of viruses and that have a total coliform positive routine sample under the Total Coliform Rule sampling in the distribution system.
    - Assessment monitoring complements triggered monitoring. A state has the option to require systems to conduct source water assessment monitoring at any time to help identify high-risk systems.
3. Corrective actions required for any system with a significant deficiency or source water fecal contamination. The system must implement one or more of the following corrective action options: correct all significant deficiencies; eliminate the source of contamination; provide an alternate source of water; or provide treatment that reliably achieves 99.99 percent inactivation or removal of viruses.
4. Compliance monitoring to ensure that treatment technology installed to treat drinking water reliably achieves at least 99.99 percent inactivation or removal of viruses.

The compliance date for requirements of this rule other than the sanitary survey was December 1, 2009. The SITC currently operates its groundwater sources on an emergency basis only and is therefore exempt from this rule.

Future Regulations

Drinking water regulations are continuously changing in an effort to provide higher quality and safer drinking water. Modifications to the existing rules described above and implementation of new rules are planned for the near future. A summary of upcoming drinking water regulations that will most likely affect the SITC is presented below.

Radon

In July of 1991, the EPA proposed a regulation for radon, as well as three other radionuclides. The 1996 SDWA amendments required the EPA to withdraw the 1991 proposal due to several concerns that were raised during the comment period. A new proposed regulation was published in the Federal Register on November 2, 1999. Comments on the proposed rule were due to the EPA by February 4, 2000. Final federal requirements for addressing radon were delayed until 2008, but have not yet been published. The rule proposes a 300 pCi/L MCL for community water systems that use groundwater, or an alternative, less stringent MCL of 4,000 pCi/L for water systems where it states implement an EPA-approved program to reduce radon risks in household indoor air and tap water. It is not currently known when or what a radon regulation may require as adopted by the EPA or what the implementation schedule for the rule will be. Because the final radon rule requirements are uncertain, the impact of this rule on the SITC is unknown at this time.

Unregulated Contaminant Monitoring Regulation Revisions

In accordance with the original Unregulated Contaminant Monitoring Regulation (UCMR), the EPA is proposing an updated contaminant monitoring list for the next 5-year monitoring cycle, in addition to other minor revisions to the UCMR. The proposed rule was published August 22, 2005, in the Federal Register, and the comment period for the proposed revisions closed on October 21, 2005. The proposed revisions include a list of 26 chemicals that will be monitored during the 2007 through 2011 monitoring cycle, and approves several new testing methods to conduct the

monitoring. For this upcoming cycle, all systems serving more than 100,000 people and a larger representative sample of smaller water systems than mandated under the original rule will be required to monitor for contaminants. The rule also requires additional water system data to be reported with the monitoring results, establishes a procedure for determining minimum reporting levels and proposes several revisions to the implementation of the monitoring program.

SOURCE WATER QUALITY

This section presents the current water quality standards for groundwater sources and the results of the SITC's recent source water quality monitoring efforts. A discussion of the water quality requirements and monitoring results for the SITC's distribution system is presented in the section that follows.

Drinking Water Standards

Drinking water quality is regulated at the federal level by the EPA and at the state level by DOH. Drinking water standards have been established to maintain high-quality drinking water by limiting the levels of specific contaminants (i.e., regulated contaminants) that can adversely affect public health and are known or likely to occur in public water systems. Non-regulated contaminants do not have established water quality standards and are generally monitored at the discretion of the water purveyor and in the interest of customers.

The regulated contaminants are grouped into two categories of standards – primary and secondary. Primary standards are drinking water standards for contaminants that could affect health. Water purveyors are required by law to monitor and comply with these standards and notify the public if water quality does not meet any one of the standards. Secondary standards are drinking water standards for contaminants that have aesthetic effects, such as unpleasant taste, odor or color (staining). The national secondary standards are unenforceable federal guidelines or goals and federal law does not require water systems to comply with them. However, states may adopt their own enforceable regulations governing these contaminants. The State of Washington has adopted regulations that require compliance with some of the secondary standards. Water purveyors are not required to notify the public if water quality does not meet the secondary standards.

Source Monitoring Requirements and Waivers

The SITC is required to perform water quality monitoring at each of its active sources for inorganic chemical and physical substances, organic chemicals and radionuclides. The monitoring requirements that the SITC must comply with are specified by the EPA. A description of the source water quality monitoring requirements and procedures for each group of substances is contained in the SITC's Water Quality Monitoring Plan, which is included as **Appendix I**.

Source Monitoring Results

Although they only operate during emergencies, the SITC's groundwater sources have been of good quality and have met or exceeded all drinking water standards, except for slightly higher than allowable levels of manganese at Well 2. The SITC has monitored each source in the past for volatile organic chemicals (VOCs), inorganic chemicals and physical substances, nitrate and radionuclides; however, since the SITC currently purchases a majority of its water from Anacortes, routine sampling of these constituents has been waived by the EPA in recent years.

DISTRIBUTION SYSTEM WATER QUALITY

Monitoring Requirements and Results

The SITC is required to perform water quality monitoring within the distribution system for coliform bacteria, disinfectant (chlorine) residual concentration, fluoride, and lead and copper in accordance with EPA regulations. Anacortes monitors disinfection by-products within its water system and reports these results to the SITC each year in its Consumer Confidence Report. A description of the distribution system water quality monitoring requirements and procedures are contained in the SITC Water Quality Monitoring Plan that is included in **Appendix I**.

The SITC has been in compliance with all monitoring requirements for the past several years, except for a few coliform violations that are described in the following section. A summary of the distribution system water quality monitoring results within the SITC's system is also presented.

Coliform Monitoring

Water samples tested positive for coliform bacteria only twice in the past twenty years. E. coli has never been detected in any samples and public notification was never necessary. Based on the SITC's current population, a minimum of one coliform sample per month throughout the system is required for collection.

Disinfectant Residual Concentration Monitoring

Disinfection requirements applicable to the SITC are contained in the Safe Drinking Water Act, which states that a disinfectant residual concentration shall be detectable in all active parts of the distribution system and that the maximum residual disinfectant level goal shall be 4.0 mg/L for chlorine and chloramines. The SITC's chlorination target is to maintain a residual disinfectant concentration of at least 0.2 mg/L in the distribution system. Free chlorine residual has ranged between 0.06 mg/L and 1.0 mg/L over the past 10 years with an average concentration of 0.37 mg/L. The SITC is in compliance with regulations.

Disinfectants/Disinfection By-products Monitoring

Trihalomethanes (THM) and haloacetic acids (HAA5) are disinfection by-products that are formed when free chlorine reacts with organic substances (i.e., precursors), most of which occur naturally. Formation of THM and HAA5 is dependent on such factors as amount and type of chlorine used, water temperature, concentration of precursors, pH and chlorine contact time. Trihalomethanes have been found to cause cancer in laboratory animals and are suspected to be human carcinogens. The SITC purchases its water from Anacortes, who tests for THM and HAA5 within its distribution system. Anacortes' 2009 Consumer Confidence Report shows THM ranging between 18.1 and 42.2 mg/L, and averaging 28.84 mg/L, and HAA5 ranging between 13.9 and 29.4 mg/L, and averaging 20.23 mg/L. Therefore, the SITC is in compliance with this regulation.

In response to the Stage 1 and Stage 2 D/DBPR, the SITC expanded its distribution system monitoring to include THM and HAA5. The SITC also completed an Initial Distribution System Evaluation (IDSE) standard monitoring plan, which was submitted to the EPA for compliance. The IDSE standard monitoring plan is included in **Appendix I**.

Lead and Copper Monitoring

The Lead and Copper Rule identifies the action level for lead as being greater than 0.015 mg/L and the action level for copper as being greater than 1.3 mg/L. The results of the tests from 1999, which

included five sample sites, indicated a range of less than 0.002 mg/L to 0.002 mg/L for lead and a range of 0.161 mg/L to 0.429 mg/L for copper. The results of the tests from 2005, which included five sample sites, indicated a range of less than 0.002 mg/L to 0.003 mg/L for lead and a range of 0.108 mg/L to 0.311 mg/L for copper. The results of the tests from 2008, which included nine sample sites, indicated a range of less than 0.002 mg/L to 0.003 mg/L for lead and a range of 0.034 mg/L to 0.178 mg/L for copper. These results have all been satisfactory, since the 90th percentile concentration of either lead or copper from each group of samples has not exceeded the action levels.

Flouride

The SITC chooses to fluoridate its water as a public measure for the promotion of dental health, although fluoridation is not mandated by the EPA. The MCLG for fluoride is 4.0 mg/L and the secondary MCL is 2.0 mg/L. The secondary MCL was set to balance the beneficial uses of fluoride with the undesirable effects of overexposure. The SITC has set a target concentration for fluoride of 0.7 mg/L per recommendation from Indian Health Services, which is a branch of the U.S. Department of Health and Human Services .

Asbestos

The SITC has not been required by the EPA to perform any asbestos monitoring within its water system.

Water System Analysis

7

INTRODUCTION

This chapter presents the analysis of the Swinomish Indian Tribal Community's (SITC) existing water system. Individual water system components were analyzed to determine their ability to meet policies and design criteria under existing and future water demand conditions. The policies and design criteria are presented in **Chapter 5**, and the water demands are presented in **Chapter 4**. A description of the water system facilities and current operation is presented in **Chapter 2**. The last section of this chapter presents the existing system capacity analysis that was performed to determine the maximum number of equivalent residential units (ERUs) that can be served by the SITC's existing water system.

SOURCE CAPACITY EVALUATION

This section evaluates the combined capability of the SITC's existing sources (one intertie and two groundwater wells) to determine if they have sufficient capacity to meet the overall demands of the system based on existing and future water demands. The section that follows will address the evaluation of the individual facilities to determine if they have sufficient capacity to meet the existing and future demands of the individual zone, or zones, that they supply.

Analysis Criteria

Supply facilities must be capable of adequately and reliably supplying high quality water to the system. In addition, supply facilities must provide a sufficient quantity of water at pressures that meet the requirements of WAC 246-290-230, which the SITC uses as a guideline. Typically, the evaluation of the combined capacity of the sources is based on the criterion that they provide supply to the system at a rate that is equal to or greater than the maximum day demand of the system. However, since the SITC's 296 and 328 Zones rely directly on the Anacortes Intertie to provide fire flow, rather than the Main Reservoir, the SITC system must be capable of supplying the maximum rate of fire flow for the 296 and the 328 zones plus the peak hour demand of both zones, while also supplying the maximum day demand to all other zones of the system.

Source Capacity Analysis Results

The combined capability of the SITC's active sources to meet both existing and future demand requirements, based on existing capacities of the individual supply facilities, is presented in **Table 7-1**. The demands used in the evaluation for 2015 and 2029 are future demand projections without reductions from water use efficiency efforts, as shown in **Table 4-7** of **Chapter 4**. Therefore, if additional reductions in water use are achieved through water use efficiency efforts, the total source capacity required in the future will be less than that shown in **Table 7-1**.

Table 7-1
Water Source Capacity Evaluation

Description	Existing 2009	Future Projections 2015	Future Projections 2029
Required Source Capacity (gpm)			
296/328 Zone Max Fire Flow Req't	1,000	1,000	1,000
296/328 Zone Peak Hour Demand	5	6	9
All Other Zones Max Day Demand	133	149	195
Totals	1,138	1,155	1,204
Available Source Capacity (gpm)			
Anacortes Intertie	1,944	1,944	1,944
Well 2	42.5	42.5	42.5
Well 3	42.5	42.5	42.5
Totals	2,029	2,029	2,029
Surplus or Deficient Source Capacity (gpm)			
Surplus or Deficient Amt.	891	874	826

The results of the analysis indicate that the SITC has approximately 891 gallons per minute (gpm) of surplus source capacity to meet existing demands. The SITC's existing sources are sufficient to meet the projected demands of the system beyond 2029.

WATER SUPPLY FACILITIES EVALUATION

This section evaluates the existing supply facilities to determine if they have sufficient capacity to provide water supply at a rate that meets the existing and future demands of the zone(s) that they supply.

Analysis Criteria

The evaluation to determine if supply facilities have adequate capacity is based on one of two criteria, as follows: 1) If the pressure zone that the facility provides supply into has water storage, then the amount of supply required is equal to the maximum day demand of the zone; or 2) If the pressure zone that the facility provides supply into does not have water storage, then the amount of supply required is equal to the peak hour demand of the zone. The higher supply requirement of the latter criteria is due to the lack of equalizing storage that is typically utilized to provide short-term supply during times of peak system demands.

Supply Analysis Results

323 Zone Facilities

Water supply is provided to the 323 Zone from the Main Booster Pump Station, Well 2 and Well 3. The Main Booster Pump Station also provides supply to the 184, 188 and 210 Zones indirectly through several pressure reducing stations. **Table 7-2** summarizes the current and future supply requirements of the 323 Zone, based on existing and projected water demands for the 323 Zone and the transfer amount necessary to meet the existing and future demands of the 184, 188 and 210 zones. **Table 7-2** also summarizes the current amount of water supply available to the 323 Zone based on current pumping rates of the supply facilities. The results of the analysis, as shown in **Table 7-2**, indicate that the existing configuration and capacities of the 323 Zone supply facilities are sufficient to meet both the existing and future demands beyond 2029.

Table 7-2
323 Zone Supply Evaluation

Description	Existing 2009	Future Projections 2015	Future Projections 2029
Required Supply (gpm)			
323/Other Zone Max Day Demand	133	149	195
Available Supply (gpm)			
Main Booster Pump Station	200	200	200
Well 2	42.5	42.5	42.5
Well 3	42.5	42.5	42.5
Totals	285	285	285
Surplus or Deficient Supply (gpm)			
Surplus or Deficient Amt.	152	136	90

328 Zone Facilities

Water supply is provided to the 328 Zone from the Reservation Lane Booster Pump Station. Since the 328 Zone does not have storage, the supply evaluation is based on the booster pump station supplying the zone's peak hour demand. **Table 7-3** summarizes the current and future supply requirements of the 328 Zone, based on existing and projected water demands for the zone. **Table 7-3** also summarizes the current amount of water supply available to the 328 Zone based on current pumping rates of the supply facility. The results of the analysis, as shown in **Table 7-3**, indicate that the existing configuration and capacity of the 328 Zone supply facility is sufficient to meet both the existing and future demands beyond 2029.

Table 7-3
328 Zone Supply Evaluation

Description	Existing 2009	Future Projections 2015	Future Projections 2029
Required Supply (gpm)			
328 Zone Peak Hour Demand	4	5	8
Available Supply (gpm)			
Reservation Lane Booster Pump Station	50	50	50
Surplus or Deficient Supply (gpm)			
Surplus or Deficient Amt.	46	45	42

STORAGE FACILITIES

This section evaluates the SITC's existing water storage tanks to determine if they have sufficient capacity to meet the existing and future storage requirements of the system. This section also identifies facility deficiencies that are not related to the capacity of the water tanks.

Analysis Criteria

Water storage is typically made up of the following components: operational storage, equalizing storage, standby storage, fire flow storage, and dead storage. Each storage component serves a different purpose and will vary from system to system. A definition of each storage component and the criteria used to evaluate the capacity of the SITC's storage tanks is provided below.

Operational Storage -- Volume of the reservoir used to supply the water system under normal conditions when the source or sources of supply are not delivering water to the system (i.e., sources are in the off mode). Operational storage is essentially the average amount of drawdown in the reservoir during normal operating conditions, which represents a volume of storage that will most likely not be available for equalizing storage, fire flow storage or standby storage. The operational storage in the SITC's reservoirs is the amount of storage between the fill, or pump starting setpoint level, and the overflow elevation of the tank.

Equalizing Storage -- Volume of the reservoir used to supply the water system under peak demand conditions when the system demand exceeds the total rate of supply of the sources. As a guideline, the Washington State Department of Health (DOH) requires that equalizing storage be stored above an elevation that will provide a minimum pressure of 30 psi at all service connections throughout the system under peak hour demand conditions. Because the SITC's supply sources primarily operate on a "call on demand" basis to fill the reservoirs, the equalizing storage requirements are determined using the standard DOH formula that considers the difference between the system peak hour demand and the combined capacity of the supply sources.

$$\mathbf{ES = (PHD - Q_S)(150\ minutes)}, \text{ but in no case less than zero}$$

Where:

ES = Equalizing storage, in gallons.

PHD = Peak hour demand, in gpm.

Q_S = Sum of all installed and active sources, except emergency supply, in gpm.

The capacity of the sources that supply the SITC water system are sufficient to meet the peak hour demands of each operating area. Therefore, the equalizing storage requirement for the system is zero.

Standby Storage -- Volume of the reservoir used to supply the water system under emergency conditions when supply facilities are out of service due to equipment failures, power outages, loss of supply, transmission main breaks or any other situation that disrupts the supply source. As a guideline for the SITC, DOH requires that standby storage be stored above an elevation that will provide a minimum pressure of 20 psi at all service connections throughout the system. The criteria for determining the standby storage requirements for the SITC's system, which has multiple supply sources, is based on the standard DOH formula that requires average day demand and supply source capacity data. The amount required is sufficient to supply the system for a 48-hour period when the primary supply facility is out of service and the system is experiencing average day demands.

$$\mathbf{SB = (2\ days)[(ADD)(N) - t_m\ (Q_S - Q_L)]}$$

Where:

SB = Standby storage, in gallons.

ADD = Average day demand per ERU, in gpd/ERU.

N = Number of ERUs.

Q_S = Sum of all installed and continuously available sources, except emergency supply, in gpm.

Q_L = Capacity of the largest source available to the system, in gpm.

t_m= Time the remaining sources are pumped on the day when the largest source is not available, in minutes. Unless otherwise restricted, this value is 1,440 minutes.

The standby storage analysis was completed for each reservoir operating area. For the 210 Zone, the only source serving the zone, the Westshore pressure reducing valve (PRV) Station, was assumed to be out of service. For the 323 Zone and all other zones, the largest capacity source that was assumed to be out of service was the Anacortes Intertie.

DOH recommends that the minimum standby storage volume be no less than 200 gallons per ERU. In the case of the 323 Zone and all other zones, this calculation determined the standby storage volume required for that SITC reservoir operating area.

Fire Flow Storage -- Volume of the reservoir used to supply water to the system at the maximum rate and duration required to extinguish a fire at the building with the highest fire flow requirement. The magnitude of the fire flow storage is the product of the fire flow rate and duration of the

system's maximum fire flow requirement established by the SITC. As a guideline, DOH requires that fire flow storage be stored above an elevation that will provide a minimum pressure of 20 psi at all points throughout the distribution system under maximum day demand conditions. The fire flow storage requirements shown in the analyses that follow are based on a maximum planning-level fire flow requirement of 3,000 gpm for a 3-hour duration. The future 415 Zone Reservoir will provide fire flow storage of 3,000 gpm for a 3-hour duration, which is the 188 Zone's largest planning-level fire flow requirement. This storage amount will be used to provide fire flow storage in the 415 Zone and to provide fire flow storage in the 184, 188, 210, and 323 zones through PRVs.

Consolidating (Nesting) Standby and Fire Flow Storage -- The criteria used to evaluate the SITC's standby and fire flow storage allows standby and fire flow storage to be nested. Thus, the larger of the two volumes is the minimum available volume as stated in WAC 246-290-235(4), which the SITC uses as a guideline.

Dead Storage -- Volume of the reservoir that cannot be used because it is stored at an elevation that, without pumping, does not provide system pressures that meet the minimum pressure requirements established by DOH, which the SITC uses as a guideline. This unusable storage occupies the lower portion of most ground-level reservoirs. Water that is stored below an elevation that cannot provide a minimum pressure of 20 psi is considered dead storage for the analyses that follow.

Storage Analysis Results

The storage analyses are based on an evaluation of the existing storage facilities providing water to two operating areas: the 210 Zone, which is served by the Pull and be Damned Reservoir; and the other operating area that serves all other pressure zones, which are served by the Main Reservoir.

Existing Storage Analysis

As shown in **Table 7-4**, the maximum combined storage capacity of the SITC's reservoirs is approximately 281,391 gallons. However, the total amount of usable storage for operational, equalizing, standby and fire flow purposes is reduced by almost 50 percent to 143,104 gallons due to the significant amount of dead storage (i.e., non-usable storage) in the lower portion of the Main Reservoir. The dead storage is due to water services in the 323 Zone that are located at higher elevations near the Main Reservoir. Dead storage caused by the normally low pressures in these areas is the result of being served by a pressure zone that is not suited to provide adequate pressures at these higher elevations. A portion of the dead storage will be converted to usable storage in the future, upon completion of the proposed pressure zone improvements described in **Chapter 9**.

Table 7-4
Existing Storage Evaluation

Description	210 Zone	All Other Zones	Totals
Available/Usable Storage (gallons)			
Maximum Storage Capacity	79,432	201,959	281,391
Dead (Nonusable) Storage	0	138,287	138,287
Total Available Storage	79,432	63,672	143,104
Required Storage (gallons)			
Operational Storage	3,972	25,704	29,676
Equalizing Storage	0	0	0
Standby and Fire Flow Storage	32,201	540,000	572,201
Totals	36,172	565,704	601,876
Surplus or Deficient Storage (gallons)			
Surplus or Deficient Amt.	43,260	-502,032	-458,772

The results of the existing storage evaluation, as shown in **Table 7-4**, indicate that the system has adequate storage in the 210 Zone operating area, but has a deficiency of approximately 502,032 gallons in the operating area that serves all other pressure zones, partially due to the significant amount of dead storage in the Main Reservoir that cannot be utilized.

Future Storage Analysis

The system's future storage requirements were computed for the 6- and 20-year planning periods, based on year 2015 and 2029 demand projections. The analyses were performed to determine the adequacy of the SITC's storage facilities to meet future storage requirements for each storage supply area. Pressure zone or other supply facility improvements discussed in **Chapter 9** may change the future storage requirements shown in the table.

Table 7-5
Future Storage Projections

Description	2015 Operating Area			2029 Operating Area		
	210 Zone	All Other Zones	Totals	210 Zone	All Other Zones	Totals
Available/Usable Storage (gallons)						
Maximum Storage Capacity	79,432	201,959	281,391	79,432	201,959	281,391
Dead (Nonusable) Storage	0	138,287	138,287	0	138,287	138,287
Total Available Storage	79,432	63,672	143,104	79,432	63,672	143,104
Required Storage (gallons)						
Operational Storage	3,972	25,704	29,675	3,972	25,704	29,675
Equalizing Storage	0	0	0	0	0	0
Standby and Fire Flow Storage	36,189	540,000	576,189	47,411	540,000	587,411
Totals	40,161	565,704	605,865	51,383	565,704	617,086
Surplus or Deficient Storage (gallons)						
Surplus or Deficient Amt.	39,272	-502,032	-462,760	28,050	-502,032	-473,982

The results of the analyses shown in **Table 7-5** indicate that adequate storage is available in the 210 Zone operating area through the 20-year planning period; however, approximately 502,032 gallons of additional storage will be required in the operating area that serves the other pressure zones by 2029.

DISTRIBUTION AND TRANSMISSION SYSTEM

This section evaluates the SITC's existing distribution and transmission system (i.e., water mains) to determine if they are adequately sized and looped to provide the necessary flow rates and pressures to meet the existing and future requirements of the system. This section also identifies deficiencies that are not related to the capacity of the water mains. Distribution system analyses were completed in 2006 and presented to the SITC in a draft letter report dated October 2006 and titled "Swinomish Indian Tribal Community Water System Hydraulic Analyses Results and CIP." Due to limited budget, the analyses were not revised based on the updated demand projections presented within this Plan. However, demand projections did not change significantly enough to alter the results of the analyses completed in 2006.

Analysis Criteria

Distribution and transmission mains must be capable of adequately and reliably conveying water throughout the system at acceptable flow rates and pressures. The criteria used to evaluate the SITC's distribution and transmission system are the state-mandated requirements for Group A water systems contained in WAC 246-290-230, Distribution Systems, which the SITC uses as a guideline. The pressure analysis criteria states that the distribution system, "shall be designed with the capacity to deliver the design peak hour demand quantity of water at 30 psi under peak hour demand flow conditions measured at all existing and proposed service water meters." It also states that if fire flow

is to be provided, "the distribution system shall also provide maximum day demand (MDD) plus the required fire flow at a pressure of at least 20 psi at all points throughout the distribution system."

Hydraulic analyses of the existing system were performed under existing peak hour demand (PHD) conditions to evaluate current pressure capabilities and identify existing system deficiencies. The existing system was also analyzed under existing maximum day demand (MDD) conditions to evaluate the current fire flow capabilities and identify additional existing system deficiencies. Additional hydraulic analyses were then performed with the same hydraulic model under future MDD conditions and with the proposed improvements to demonstrate that the identified improvements will eliminate the deficiencies and meet the requirements far into the future. The following is a description of the hydraulic model, operational conditions and facility settings used in the analyses.

Hydraulic Model

Description

A computer-based hydraulic model of the existing water system was updated using version 8.0 of the WaterGEMS® program, developed by Bentley Systems, Inc. All water mains in the SITC water system, including dead-end mains, were included in the model and based on water system maps provided by the SITC. The junction node elevation data was generated from LIDAR data also provided by the SITC. A hydraulic model node diagram, providing a graphical representation of the model of the water system, is contained in **Appendix M**.

Demand Data

The hydraulic model of the existing system contains estimated 2005 average day demand data. Supply data from the 2005 average day demand was distributed throughout the junction nodes of the model based on allocation levels that reflect the proportionate share of total supply to each supply area. The peaking factors shown in **Chapter 4** were used to analyze the system under PHD and MDD conditions.

The hydraulic model of the proposed system contains 6-year demand levels that are projected for the year 2011 and 20-year demand levels that are projected for the year 2025. The distribution of future demands is based on estimated future demand levels in each pressure zone.

Facilities

The hydraulic model of the existing system contains all active existing system facilities. For the proposed system analyses in the year 2011 and 2025, the hydraulic model contains all active existing system facilities and proposed system improvements identified in **Chapter 9** for the 6-year and 20-year planning period, respectively.

The facility settings for the pressure analyses corresponded to a peak hour demand event in the water system. The Anacortes Intertie and the Reservation Lane Booster Pump Station were operating at their normal pumping rates. The Main Booster Pump Station and Wells 2 and 3 were not operating. The reservoir levels were modeled to reflect full utilization of operational and equalizing storage. All active pressure reducing stations were modeled as being in service and at their normal set points.

Separate fire flow analyses were performed on the system to size distribution system improvements and calculate fire flow availability. The hydraulic model for the fire flow analyses contains all active system facilities with settings that correspond to MDD events. The Anacortes Intertie and the Reservation Lane and Main Booster Pump Stations were operating at their normal pumping rates. Wells No. 2 and 3 were not operating. The reservoir levels were modeled to reflect full utilization of operational, equalizing and fire flow storage, based on the maximum requirement of 2,500 gpm for two hours, or 300,000 gallons. It should be noted that higher fire flow requirements were established following the 2006 analyses and the hydraulic analyses do not reflect the larger requirement. However, for the fire flow analyses in the residential areas of the system, the reservoirs were only drawn down through the fire flow storage required for single-family residences of 1,000 gpm for 2 hours, or 120,000 gallons. Fire flow storage for the system was provided by the Main Reservoir for the existing system analyses and by the proposed 415 Zone Reservoir for the projected system analyses. All active pressure reducing stations were modeled as being in service and at their normal set points.

The hydraulic model of the proposed system in the years 2011 and 2025 contains all active existing system facilities and proposed system improvements for the 6-year and 20-year planning period that are identified in the **Chapter 9**. To replace the existing Main Reservoir and resolve the existing storage deficiency of the system, a new reservoir was modeled with an approximate available storage amount of 435,000 gallons. In 2006, the maximum fire flow requirement was assumed to be 2,500 gpm for 2 hours, which dictated the size of the proposed reservoir. At the time of the analyses for this Comprehensive Water System Plan (WSP), the maximum fire flow requirement is assumed to be 3,000 gpm for 3 hours, which will dictate a larger proposed reservoir. Additional hydraulic analyses with the larger reservoir shall be performed during the predesign phase of the reservoir. For the pressure analyses, the Anacortes Intertie and the Reservation Lane Booster Pump Station were operating at their normal pumping rates while the Main Booster Pump Station and Wells 2 and 3 were not operating. The reservoir levels were modeled to reflect full utilization of operational and equalizing storage. For the fire flow analyses, the Anacortes Intertie and the Reservation Lane and Main Booster Pump Stations were operating at their normal pumping rates, while Well 2 and Well 3 were not operating. The reservoir levels were modeled to reflect full utilization of operational, equalizing and fire flow storage, based on the maximum requirement of 2,500 gpm for 2 hours, or 300,000 gallons. It should be noted that higher fire flow requirements were established following the 2006 analyses and the hydraulic analyses do not reflect the larger requirement. However, for the fire flow analyses in the residential areas of the system, the reservoirs were only drawn down through the fire flow storage required for single-family residences of 1,000 gpm for 2 hours, or 120,000 gallons. Fire flow storage for the system was provided by the Main Reservoir. All existing and proposed pressure reducing stations were modeled as being in service and at their normal set points.

Calibration

Hydraulic model calibration is achieved by adjusting the roughness coefficients of the water mains in the model so the resulting pressures and flows from the hydraulic analyses closely match the pressures and flows from actual field tests under similar demand and operating conditions. Initial Darcy-Weisbach roughness coefficients were entered in the model based on computed estimates of the coefficients from available pipe age and material data. For example, older water mains were assigned higher roughness coefficients than new water mains, thereby assuming that the internal

surface of water pipe becomes rougher as it gets older. Additional calibration of the model was achieved using field flow and pressure data that were collected throughout the system for this purpose. The hydraulic model was calibrated in 2006 with demand data from 2005. The average accuracy of the calibrated model was approximately 92 percent of the actual field data collected.

Hydraulic Analysis Results

Several hydraulic analyses were performed to determine the capability of the system to meet the pressure and flow requirements identified in **Chapter 5** and contained in WAC 246-290-230, which the SITC uses as a guideline. The first analysis was performed to determine the pressures throughout the system under existing (2005) PHD conditions. The results of this analysis were used to identify locations of low and high pressures. To satisfy the minimum pressure requirements, the pressure at all water service locations must be at least 30 psi during PHD conditions. In addition, the system should not have widespread areas with high pressures, generally considered to be more than 100 psi. A summary of the pressure deficiencies identified from the results of this analysis is contained in **Table 7-6**. As shown in the table, all low pressure deficiencies will be resolved once the proposed improvements described in **Chapter 9** are completed.

Table 7-6
Pressure Analysis Summary

Description	Approx. Location	Existing Pressure Zone	Node Number	Pressure (psi)		
				Existing System	Future w/Improvements 2011	Future w/Improvements 2025
Low Pressure Areas						
Residential Area	Reservation Rd at Reservation Ln	296 Zone	J11	31	31	82
Residential Area	Reservation Rd at Indian Rd	323 Zone	J19	29	29	71
Residential Area	Indian Rd, 200' south of Main Reservoir	323 Zone	J261	28	28	69
High Pressure Areas						
Residential Area	Reservation Rd, north of Snee Oosh Rd	296 Zone	J6	88	88	88
Commercial Area	Fish Plant	188 Zone	J96	76	76	81
Residential Area	South end of Maple Ln	323 Zone	J175	83	83	86

The second set of analyses was performed to determine the capability of the existing water system to provide fire flow throughout the existing water system under MDD conditions. A separate fire flow analysis was performed for each node in the model to determine the available fire flow at a minimum residual pressure of 20 psi in the main adjacent to the hydrant and a maximum allowable water main velocity of 8 feet per second. More than 160 fire flow analyses were performed to comprehensively evaluate the water system. For each node analyzed, the resulting fire flow was compared to its general planning-level fire flow requirement, which was assigned according to its land use classification. As is typical of most water systems, the SITC's distribution system was constructed to meet fire flow requirements that were in place at the time of construction. Land use classification changes and/or increases in fire flow requirements over time may create deficiencies. A summary of the results of the analyses for representative system nodes is presented in **Table 7-7**.

The results of the fire flow analyses were used to identify undersized water mains and to identify proposed water main improvements.

Table 4-6 in **Chapter 4** lists the general planning-level fire flow requirements for each land use classification. Since the fire flow requirement varies for buildings within each land use classification, the land use based fire flow requirements are only used as a general target for the primary purpose of the system-wide analyses that were performed for this WSP. Additional improvements may be needed in areas where actual fire flow requirements exceed the planning-level targets and shall be the responsibility of the developer. The results of the fire flow analyses were used to identify undersized water mains and proposed water main improvements. A summary of the fire flow deficiencies is contained near the end of this section.

Table 7-7
Fire Flow Analysis Summary

Description	Approx. Location	Existing Pressure Zone	Node Number	Future Node Number	Available Fire Flow (gpm)			Target Fire Flow (gpm)
					Existing System	Future w/Improvements 2011	Future w/Improvements 2025	
Residential Area	Snee Oosh Rd at McGlinn Rd	184 Zone	J182	J182	1,170	1,170	1,230	1,000
Commercial Area	Fish Plant	188 Zone	J96	J96	2,500	2,500	4,020	3,000
Residential Area	Smokehouse Building	188 Zone	J119	J119	640	640	3,090	1,000
Commercial Area	Tribal Housing and Utilities Office	188 Zone	J66	J66	2,500	2,500	3,500	3,000
Commercial Area	Pioneer Pkwy at Moorage Wy	188 Zone	J92	J92	2,500	2,500	3,970	3,000
Residential Area	Swinomish Village	188 Zone	J82	J82	660	660	1,450	1,000
Residential Area	Sunset Dr, west of Maple Ln	210 Zone	J144	J144	890	890	1,520	1,000
Residential Area	Ray Paul Ln at Nanna Ln	210 Zone	J155	J155	960	960	1,970	1,000
Residential Area	Pull & Be Damned Rd at Indian Rd	210 Zone	J185	J185	980	980	1,680	1,000
Residential Area	Pull & Be Damned Rd at Pull & Be Damned Pt	210 Zone	J170	J170	730	730	1,260	1,000
Residential Area	Reservation Rd at Reservation Ln	296 Zone	J11	J11	400	400	2,110	1,000
Residential Area	Reservation Rd at Similk Bay Rd	296 Zone	J4	J4	2,160	2,160	2,470	1,000
Residential Area	Snee Oosh Rd, west of Village PRV	323 Zone	J30	J30	590	590	2,580	1,000
Residential Area	Indian Rd at Jack Cobahud Wy	323 Zone	J133	J133	450	450	1,230	1,000
Residential Area	Snee Oosh Rd at Pull & Be Damned Rd	323 Zone	J137	J137	580	580	1,230	1,000
Residential Area	Northwest Indian College	---	---	J202	---	---	2,680	2,000

Once all deficiencies were identified, proposed water main improvements were included in the model, and pressure and fire flow analyses were performed throughout the system to demonstrate that the improvements will eliminate the deficiencies and meet the flow and pressure requirements. These analyses were modeled under projected year 2011 and 2025 MDD conditions to ensure that the improvements are sized sufficiently to meet future system needs. A summary of the results of these analyses is shown in **Table 7-6** and **Table 7-7** for the same areas that were summarized from the existing water system analyses. The results of the analyses indicate that all fire flow deficiencies are resolved by 2025 with the proposed improvements. A description of these improvements and a figure showing their locations are presented in **Chapter 9**. A description of the deficiencies identified from the hydraulic analyses is presented in the following section.

Deficiencies

This section presents a summary of the distribution and transmission system deficiencies that were identified from the hydraulic analyses results of the existing water system and also includes

deficiencies not related to the capacity of the mains. These deficiencies will be eliminated upon completion of the proposed improvements that are presented in **Chapter 9**.

Pressure Deficiencies

The following areas have pressures that are either lower or higher than the acceptable pressure levels.

- Low pressures along Reservation Road and Indian Road from the north end of Snee Oosh Road at Reservation Road to the intersection of Indian Road and Snee Oosh Road.
- Moderately low pressures in the 188 Zone in the residential areas on the western side of the Swinomish Village.
- Moderately low pressures in the 210 Zone on Goldenview Avenue approximately 500 feet south of Maple Lane.
- Moderately high pressures in the 323 Zone at the south end of Maple Lane.
- Moderately high pressures at the fish plant.
- Moderately high pressures on Reservation Road, north of Snee Oosh Road.

Fire Flow Deficiencies

The following areas have low fire flows that do not meet the target fire flow levels.

- Low fire flows along Reservation Road and Indian Road from the north end of Snee Oosh Road at Reservation Road to the intersection of Indian Road and Snee Oosh Road, primarily due to low pressures and the undersized water mains in the area.
- Low fire flows along Snee Oosh Road from the Shorewood PRV Station to Pioneer Parkway, primarily due to the undersized water mains that serve the areas.
- Low fire flows in all areas of the Swinomish Village, primarily due to the undersized water mains that serve the area.
- Low fire flows in the 210 Zone, primarily due to the undersized water mains that serve the area.
- Low fire flow at the hydrant near the intersection of Indian Road and Jack Cobahud Way, primarily due to the undersized water main that serves the area.

Other Deficiencies

Several areas throughout the system have sufficient fire flow; however, high water velocities are experienced in the system because the water mains are undersized to carry the fire flows at acceptable water velocities. Operating the system with high water velocities can potentially damage the system due to the high pressure surges that commonly occur with high water velocities.

Some areas of the system have water mains that are more than 40 years old, which is near the average life expectancy of water mains. Most of the older water mains are located in the western portion of the 184 Zone and the Swinomish Village area in the 188 Zone. The SITC is planning to replace the aging water mains in the future, as shown in the schedule of planned improvements in **Chapter 9**. All new water main installations are required to use ductile iron pipe or C900 PVC water

main in accordance with the SITC Developer Standards for the Construction of Water Main Facilities, a copy of which is included in **Appendix F**.

PRESSURE REDUCING STATIONS

This section evaluates the SITC's existing pressure reducing stations to identify deficiencies related to their current condition and operation capability.

Evaluation and Deficiencies

The SITC has a total of four pressure reducing stations, all of which are less than 30 years old. The Shorewood and Westshore PRV stations, which serve the 184 and 210 zones, are functioning properly, but the PRV stations do not have pressure relief facilities to prevent overpressurization in the event that a pressure reducing station control valve fails in the open direction. In addition, the Shorewood PRV station needs to be relocated to the intersection of Snee Oosh Road and Dan Road in order to provide greater pressure to customers in the Shorewood Heights area. The Village PRV and Squi-Qui PRV stations that serve the 188 Zone are also functioning properly, but the Village PRV is not equipped with a pressure relief facility. Proposed improvements for additional pressure reducing stations and general maintenance for the other pressure reducing stations are addressed in **Chapter 9**.

TELEMETRY AND SUPERVISORY CONTROL SYSTEM

This section evaluates the SITC's existing telemetry and supervisory control system to identify deficiencies related to its condition and current operational capability.

Evaluation and Deficiencies

The SITC's existing telemetry and supervisory control system, which was installed in 1995, was manufactured by Rugid. The telemetry and supervisory control system needs to be updated primarily because Rugid no longer exists and no technical support is available for the system currently in place.

SYSTEM CAPACITY

This section evaluates the capacity of the SITC's existing water system components (supply, storage and transmission) to determine the maximum number of equivalent residential units (ERUs) it can serve. Once determined, system capacity becomes useful in calculating how much capacity is available in the water system to support new customers that apply for water service through the building permit process. The system capacity information, together with the projected growth of the system expressed in ERUs, also provides the SITC with a schedule of when additional system capacity is needed.

Analysis Criteria

The capacity of the SITC system was determined from the limiting capacity of the transmission, supply, and storage facilities. Since the SITC does not further treat its water supply from Anacortes, an analysis was not completed for water treatment system capacity. The transmission capacity

analysis was based on the total capacity of the transmission mains and the system's MDD per ERU. The supply capacity analysis was based on the limiting capacity of the supply facilities and the system's MDD per ERU.

The storage capacity analysis was calculated using two different calculation methods. The first method determines the total storage requirement per ERU from the total existing storage requirements presented earlier in this chapter and the existing number of ERUs. Currently, DOH requires that storage capacity be based on equalizing and standby storage and the computed storage requirement per ERU. Operational and fire flow storage capacity are excluded from this second storage analysis since these components are not directly determined by water demand or ERUs. However, since the existing fire flow storage requirement is greater than the total available storage, there is no remaining storage available for equalizing and standby storage and the calculation indicates that there is no available storage capacity. Both calculations are presented in the existing capacity analysis that follows.

Capacity Analysis Results

A summary of the results of the existing system capacity analysis is shown in **Table 7-8**. The results of the existing system capacity analysis indicate that the limiting capacity of the system is storage, which can support up to a maximum of approximately 115 ERUs when the total available storage requirement calculation is utilized. The existing water system has a deficiency of approximately 368 ERUs due to insufficient fire flow storage and the significant amount of dead storage in the 323 Zone. Thus, additional storage must be constructed to ensure the system has sufficient capacity for its existing customers. All other water system components have sufficient capacity to support existing water system customers.

Table 7-8
Existing System Capacity Analysis

Demands Per ERU Basis	
Average Day Demand Per ERU (gal/day)	167
Max Day Demand Per ERU (gal/day)	405
Peak Hour Demand Per ERU (gal/day)	730

Supply Capacity	
Limiting Supply Rate - Source Capacity (gal/day)	2,922,336
Max Day Demand Per ERU (gal/day)	405
Maximum Supply Capacity (ERUs)	7,207

Total Storage Capacity[1]	
Maximum Storage Capacity (gal)	143,104
Storage Requirement Per ERU (gal)	1,248
Maximum Storage Capacity (ERUs)	115

Equalizing and Standby Storage Capacity[2]	
Maximum Equalizing & Standby Storage Capacity (gal)	0
Equalizing & Standby Storage Requirement Per ERU (gal)	227
Maximum Storage Capacity (ERUs)	0

Transmission Capacity	
Transmission Capacity (gal/day)	1,015,200
Max Day Demand Per ERU (gal/day)	405
Maximum Transmission Capacity (ERUs)	2,504

Maximum System Capacity[3]	
Based on Limiting Facility - Storage	115

Unused Available System Capacity	
Maximum System Capacity (ERUs)	115
Existing (2009) ERUs	482
Deficient Capacity (ERUs)	-368

1 = Storage capacity calculated using the total available storage.

2 = Storage capacity calculated using current DOH requirements for storage capacity analysis. Since the required fire flow storage is greater than the total available storage, there is no available storage for equalizing and standby storage.

3 = Storage capacity calculated using current DOH requirements for storage capacity analysis was excluded from determining the maximum system capacity.

Operations and Maintenance

8

INTRODUCTION

The Swinomish Indian Tribal Community's (SITC) water operations and maintenance program consists of the following elements.

1. Normal operation of the water supply, treatment and distribution system.
2. Emergency operation of the water system with one or more of the components not available for normal use due to natural or man-made events.
3. Preventive maintenance program for ensuring that the water system is maintained in accordance with generally accepted standards.
4. Cross-connection control program to ensure that there is no threat to the integrity of the water supply due to contamination from a customer's operations.

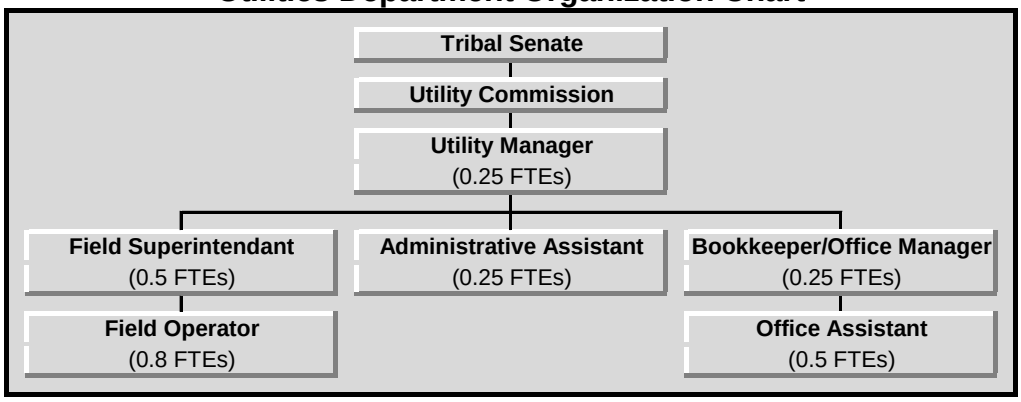
NORMAL OPERATIONS

Personnel

The Swinomish Utility Commission (Commission) was initially formed by the Tribal Senate for the purpose of overseeing the construction and development of the water supply system for all residents within the exterior boundaries of the Swinomish Reservation (Reservation). The Commission serves as the policy-setting and governing body of the Swinomish Indian Tribal Utility Authority (SUA). The Utility Manager supervises daily operations of the utilities department and reports to the Commission as shown in **Table 8-1**.

The current utility department operations and maintenance (O&M) staff consists of maintenance and administrative personnel who function under the Utility Manager, as shown in **Table 8-1**. The utility system tasks that are performed by the staff include inspection, testing, installation and repair of system facilities; routine operation and preventive maintenance; record keeping; administrative tasks; general clerical work; and corrective or breakdown maintenance required in response to emergencies.

Table 8-1
Utilities Department Organization Chart



Personnel Responsibilities

The key responsibilities of the utility O&M staff are summarized below.

Tribal Senate – Overall Tribal governing body. Responsible for adopting codes related to utility operations, appointing members to the Utility Commission and approving annual operating budget and rates.

Utility Commission – Five-member governing body appointed by the Tribal Senate. Responsible for hiring and supervising the Utility Manager, providing general operational direction for the Utility Manager, assisting in developing budget and rate proposals for Tribal Senate approval and developing utility policies for the SUA.

Utility Manager – Responsible for all day-to-day operations of the SUA. Oversees all staff, field operations, compliance with Tribal and Environmental Protection Agency (EPA) health standards, finance and budgets, system improvement planning and implementation, grant writing, customer relations and on-call operator.

Field Operator –Performs routine maintenance and operation of water and sewer facilities.

Field Superintendent – Directly oversees all field operations, plan checks, and field inspections. Oversees the operation and maintenance of the water treatment facilities and is responsible for the production of the consumer confidence report. Conducts water sampling and testing procedures and emergency repairs.

Administrative Assistant – Responsible for preparing and tracking accounts payable and receivable; managing customer collections; overseeing computer software programs, operations and upgrades; and providing direct assistance to the Utility Manager.

Bookkeeper/Office Manager – Responsible for overall accounting function of the SUA.

Office Assistant – Responsible for front office duties, including customer assistance, assistance with billing and accounts payable and maintenance of office equipment and supplies.

Certification of Personnel

Table 8-2 shows the current certifications of the SITC's water O&M staff. It is SITC policy to maintain a well-qualified, technically trained staff. The SITC allocates funds annually for personnel training, certification, and membership in professional organizations, such as the American Water

Works Association (AWWA). The SITC believes that the time and money invested in training, certification and professional organizations are repaid many times over in improved safety, skills and confidence.

Table 8-2
Personnel Certification

Name	Position	Certification
Timothy White	Field Superintendant	WDM2
Josh Gobert	Field Operator-in-Training	N/A

Certification Definitions
WDM - Water Distribution Manager

Available Equipment

The utilities department has several types of equipment available for daily routine operation and maintenance of the water system. The equipment is stored at the garage bay near the Field Superintendent's office. If additional equipment is required for specific projects, the SUA rents this equipment or contracts with a local contractor for the services needed. A stock of supplies in sufficient quantities for normal system operation and maintenance and anticipated emergencies is stored at the Field Superintendent's office and in the office adjacent to the Field Superintendent's office. A list of major equipment used in the normal operation of the water system is shown in **Table 8-3**.

Table 8-3
Equipment List

Major Equipment
1 - 1 Ton Service Trucks
1 - 1/2 Ton Pickup Trucks
Minor Equipment
2 - 3" Centrifugal Trash Pumps
2 - Locators
1 - Compactor
Miscellaneous small tools, etc.
Communications Equipment
Cell Phones and Pagers

The following representatives typically provide supplies and chemicals to the SITC.

Pump Supplies:
Dahlman Pump and Well Drilling, Inc.
17313 Cook Road, Bow
WA 98233
(360) 757-6666

Electrical Supplies:
Dahl Electric, Inc.
521 E Victoria
Burlington, WA 98233
(360) 755-1145

Chemical Supplies:
Univar USA, Inc.
17425 NE Union Hill Road
Redmond, WA 98025-3375,
(425) 889-3400

Skagit Farmers Supply-Cenex
1276 S Burlington Boulevard
Burlington, WA 98233-3316
(360) 757-6053

USABlueBook
4825 E. Cheyenne Avenue
Las Vegas, NV 89115
(800) 548-1234

Supplies:
H.D. Fowler
2165 Midway Lane
Bellingham, WA 98226
(360) 732-8400

Ferguson Enterprises
2010 Park Lane
Burlington, WA 98233
(360) 707-2030

H.B. Jaeger
1687 Port Drive
Burlington, WA 98233
(360) 707-5958

The utilities department utilizes several different types of communications equipment to ensure a reliable and redundant means of communication within the department. All employees are equipped with cellular telephones and pagers. The cell phones also provide personnel the capability to communicate, as necessary, with other cities, emergency support services and Skagit County (County).

Routine Operations

Routine operations involve the analysis, formulation, and implementation of procedures to ensure that the facilities are functioning efficiently and meeting pressure requirements and other demands of the system. The utility's maintenance procedures are suitable, with repairs being made promptly so customers receive high quality water service.

Continuity of Service

The SITC has the structure, stability, authority and responsibility to ensure that water service will be continuous. For example, changes in the Commission or staff would not have a pronounced effect on the SITC's customers or quality of service.

Routine Water Quality Sampling

The SITC must comply with EPA regulations in regard to routine water quality monitoring. The rules and regulations under the Safe Drinking Water Act provide minimum monitoring requirements for routine water quality sampling. The sampling requirements depend on the population served, source type and treatment provided. The SUA currently performs all routine coliform sampling throughout the distribution system. Based on the current population served, one monthly coliform sample is required. A further discussion of the water quality monitoring program is contained in **Chapter 6** and **Appendix I**.

Cross-Connection Control

The SITC does not currently have a formal cross-connection control program, but they will strive to comply with the following guidelines and will move towards a formal program in the future. Backflow prevention devices are required at service connections where a potential for contamination exists. The SITC contracts with a certified backflow assembly tester to annually inspect and test the backflow prevention assemblies in the water system. A further discussion of the cross-connection control program is contained in **Chapter 5**.

Recordkeeping and Reporting

The Washington State Department of Health (DOH) has enacted regulations for recordkeeping and reporting that may be found in Washington Administrative Code 246-290-480. The regulations identify recordkeeping and reporting procedures for operations and water quality testing. Although the SITC is not specifically required to meet these guidelines, the recordkeeping and reporting procedures are useful guidelines for any water system and the SITC strives to comply with these requirements.

Recordkeeping

DOH requires retention of critical records dealing with facilities and water quality issues as summarized below. Although the SITC is not specifically required to meet these guidelines, the SITC strives to comply with the DOH recordkeeping requirements.

- Bacteriological analysis results: 5 years.
- Chemical analysis results: for as long as the system is in operation.
- Daily source meter readings: 10 years.
- Other records of operation and analyses as may be required by DOH: 3 years.
- Documentation of actions to correct violations of primary drinking water standards: 3 years after last corrective action.
- Records of sanitary surveys: 10 years.
- Project reports, construction documents and drawings, inspection reports, and approvals: life of the facility.

The SITC's recordkeeping procedure is as follows.

1. The field technicians provide information to the Utility Manager, who must review the information prior to submittal to the Commission. Upon review of the information/report, the Utility Manager is responsible for filing all documents to the reporting agencies.

2. The information is filed at the office of the Field Superintendent.

Reporting

1. The SITC must report the following to the EPA.

   - Within 48 hours: failure to comply with primary standards or treatment technique requirements.
   - Within 48 hours: failure to comply with the monitoring requirements.
   - Within 48 hours: violation of a primary maximum contaminant level (MCL).
   - Within one business day: backflow incident.

2. The SITC must submit to the EPA all applicable reports required by the EPA and Indian Health Services. Monthly reports are due by the tenth day of the following month, unless otherwise specified.

3. Daily source meter readings must be made available to the EPA on request.

4. Total annual water production records for each source must be made available to the EPA upon request.

5. A water facilities inventory and report form (WFI) must be submitted to the EPA within 30 days of any change in name, category, ownership or responsibility for management of the water system.

6. The SITC must notify the EPA of the presence of:

   - Coliform in a sample within 10 days of notification by the testing laboratory; and
   - Fecal coliform or E. coli in a sample by the end of the business day in which the SITC is notified by the testing laboratory.

7. When a coliform MCL violation is determined, the SITC must:

   - Notify the EPA within 24 hours of determining an acute coliform MCL violation;
   - Notify the EPA before the end of the next business day when a non-acute coliform MCL is determined; and
   - Notify water customers within 24 hours of an acute coliform MCL violation.

8. If Volatile Organic Chemicals (VOC) monitoring is required, a copy of the results of the monitoring and any public notice must be sent to the EPA within 30 days of receipt of the test results. The SITC has been exempt from VOC monitoring by the EPA since 1996.

Operations and Maintenance Records

Facilities Operations and Maintenance Manuals

Operations and maintenance manuals are filed at the Field Superintendent's office are available for staff member's reference. The SITC plans to maintain its policies of requiring complete operations and maintenance manuals for all new equipment.

Mapping and As-Built Drawing Records

Drawing maintenance is essential to maintenance crews, planners, developers and anyone else needing to know how the water system is laid out throughout the SITC. The drawing records are stored in an organized file at the Field Superintendent's office and are maintained by the SUA.

Operations and Maintenance Records

Records regarding the following items are stored at the Field Superintendent's office.

- Well sounding and static water levels
- Water usage
- Bacteriological tests
- Backflow and cross-connections
- Water samples from new developments
- Chlorination levels
- Water used for construction
- Hydrant repairs
- Hydrant meter forms
- Water maintenance
- Pump motor tests
- Hydrant databases
- Confined spaces
- Water consumable inventory
- Water main flushing
- Water main notes
- Water worksheets

Safety Procedures and Equipment

Safety is the concern and responsibility of all water O&M staff. The SITC has taken steps toward educating its staff and providing resources to ensure a safe working environment and will strive to improve its safety program on an ongoing basis. The American Water Works Association publishes a manual entitled *Safety Practices for Water Utilities (M3)* that describes safety programs and provides guidelines for safe work practices and techniques for a variety of water utility work situations.

The following procedures are to be followed for O&M tasks that involve the most common potential work place hazards in the water system.

Use of Chlorine or Chlorine Products

Standard Procedure – Handle with care, provide adequate ventilation, wear safety glasses and rubber gloves.

Use of Water Treatment Chemicals

Standard Procedure – Follow MSDS and facility standard operating procedures.

Working in Confined Spaces

Standard Procedure – Follow state requirements for confined space entry.

Working Around Heavy Equipment

Standard Procedure – Obtain proper training and follow all safety procedures.

Working in Traffic Areas

Standard Procedure – Wear proper clothing and provide adequate signage and flagging for work area.

Working on or Around Water Reservoirs

Standard Procedure – Follow proper safety harness procedures for working on tall structures.

Working in or Around Pump Stations

Standard Procedure – Obtain proper training and follow all safety procedures for working on pumps and electrical equipment.

Working on Asbestos Cement (AC) Water Main

Standard Procedure – Hire a contractor for any work on the small amount of AC water main in the SITC water system.

EMERGENCY OPERATIONS

Capabilities

The SITC is well equipped to accommodate short-term system failures and abnormalities. Its capabilities are as follows.

Multiple Supply Capability

The SITC has two emergency wells that could supply the water distribution system for a short period of time if the Anacortes intertie supply were disrupted. The SITC can also use the Shelter Bay intertie for a short period of time to supply the 188 pressure zone if the supply from the Anacortes intertie and the emergency wells is disrupted.

Distribution System

Looped water mains are installed wherever possible to improve water circulation (i.e., water quality) and minimize impacts to the system in the event that a portion of the distribution system must be taken out of service for maintenance or repairs.

Emergency Equipment

The SUA is equipped with the necessary tools to deal with common emergencies. If a more serious emergency should develop, the SITC will hire a local contractor who has a stock of spare parts necessary to make repairs to alleviate the emergency condition.

Emergency Telephone

Key or on-call personnel can be reached by the Utility Manager and all emergency situations are reported by calling the water emergency number, (360) 466-7223, or 911.

On-Call Personnel

The on-call person is equipped with a pager and can generally respond to a call within 30 minutes. A list of emergency telephone numbers is provided to each on-call employee. New employees are not placed on-call until they are familiar with the water system and maintenance procedures and have met the minimum standards, certification and qualifications. Currently, the Utility Manager and the Field Superintendent are the on-call personnel.

Material Readiness

Some critical repair parts, tools and equipment are on-hand and kept in fully operational condition. As repair parts are used, they are re-ordered. Inventories are kept current and adequate for most common emergencies that can be reasonably anticipated. The SUA has ready access to an inventory of repair parts, including parts required for repair of each type and size of pipe within the service area.

Emergency Response Plan

A contingency plan has been prepared that contains a vulnerability assessment of the SITC water system facilities, a contingency operation plan for responding to emergency, and other elements. The contingency plan is included in **Appendix L**.

Public Notification

The Federal Safe Drinking Water Act (SDWA) and the EPA Public Notification Rule require purveyors to notify customers if any of the following conditions occur.

- National Public Drinking Water Regulation (NPDWR) violations;
- Failure to comply with an applicable maximum contaminant level or maximum residual disinfectant level;
- Failure to comply with a prescribed treatment technique;
- Failure to comply with water quality monitoring, as required by drinking water regulations;
- Failure to comply with testing procedures as prescribed by drinking water regulations;

- Operation under a variance or exemption;
- Failure to comply with the requirements of any schedule that has been set under a variance or exemption;
- Occurrence of a waterborne disease outbreak or other waterborne emergency;
- Exceeding the secondary maximum contaminant level (SMCL) for fluoride;
- Availability of unregulated contaminant monitoring data;
- Issuance of a departmental order;
- Failure to comply with a departmental order; or
- Issuance of a category red operating permit.

Public notice requirements for each type of violation or situation are organized into three tiers per the Code of Federal Regulations in 40 CFR 141.201 through .208, and are based on the seriousness of the violation and the potential for adverse health effects. Tier 1 public notices are required for NPDWR violations and situations with significant potential to have serious adverse effects on human health as a result of short-term exposure. Public notices in this tier must be provided as soon as possible, but no later than 24 hours after the violation is known. Tier 2 public notices are required for all other NPDWR violations and situations not covered in Tier 1 with the potential to have serious adverse effects on human health. Public notices under Tier 2 requirements, with the exception of turbidity violations, must be provided as soon as possible, but no later than 30 days after the violation is known. Repeat notices must be issued for as long as the violation persists. All other NPDWR violations and situations not included in Tier 1 and Tier 2 are grouped within Tier 3. Tier 3 public notices must be provided within one year of the SITC learning of the violation or beginning operations under a variance or exemption. The notice must be repeated annually for as long as the violation, variance, exemption or other situation persists.

PREVENTIVE MAINTENANCE

Maintenance schedules that meet or exceed manufacturer's recommendations have been established for all critical components in the SITC water system. The following schedule is used as a minimum for preventive maintenance.

Storage Facilities

Daily	Visual and audio inspections.
Weekly	Check security and inspect facilities for proper operation.
Annually	Clean and check interior condition, vents, hatches, etc. on reservoirs.
5 to 7 Year Intervals	Diver inspection of interior condition and remove silt.
As Needed	Remove tall grass, brush and saplings.

Distribution System

Water Mains	
Annually or As Needed	Leak survey.
Annually	Flush.
As Needed	Maintain access road along Tallawhalt Way and remove tall grass, brush and saplings on access road.
Wells	
Daily	Log and record volume delivered and current supply rate.
Weekly	Check security.
Annually	Check all valves and screens; check control valve settings.
As Needed	Maintain electrical and mechanical equipment; paint structures and piping. Maintain access roads and remove tall grass, brush and saplings on access road.
Booster Pump Stations	
Daily	Visual and audio inspection; log and record volume delivered and pump motor hours.
Weekly	Observe and record motor current draw (three phases); check packing; measure and record discharge pressure; check motor noise, temperature and vibration.
Weekly	Check security.
Annually	Take inventory of parts, pumps and motors.
As Needed	Calibrate flow meter; maintain electrical and mechanical equipment; paint structures and piping; remove tall grass, brush and saplings.
Engine Generator Sets	
Weekly	Operate to achieve normal operating temperatures; observe output.
As Needed	Replace fluids and filters in accordance with manufacturer's recommendations (or more frequently depending on amount of use).
As Needed	Perform tune-up; replace parts as necessary.
Pressure Reducing Stations	
Annually	Flush and check all valves and screens; check pressure settings; rebuild and paint every 5 years, or as necessary.

Isolation Valves	
Annually	Locate valve boxes and check accuracy of measurements and permanence of landmarks in valve record book. Operate full open/closed; uncover where buried; clean out valve boxes and repair as necessary.
Hydrants	
Annually	Check for leakage and visual damage. Operate and flush; check drain rate; lubricate as necessary; measure pressure; paint as necessary; remove tall grass, brush and saplings. Check nozzle and cap threads, clean and lubricate per manufacturer's recommendations. Replace lost and damaged gaskets. Check and operate auxiliary valve in accordance with the valve maintenance schedule. Leave in open position. Inspect drain system to ensure proper drainage and protection from freezing weather.
Meters	
2 to 10 Year Intervals	Time and measure volume of meter-delivered flow; dismantle, clean and inspect all parts; replace worn or defective parts; retest meter for accuracy. Frequency varies based on meter size.
Air and Vacuum Release Valve Assemblies	
Annually	Flush and inspect; remove tall grass, brush and saplings.
Blowoff Assemblies	
Annually	Flush and inspect; remove tall grass, brush and saplings.
Telemetry and Control System	
Monthly	Visually inspect cabinets and panels for damage, dust and debris.
Semi-Annually	Inspect inside of cabinets and panels for damage, dust and debris.
Semi-Annually	Vacuum clean all modules.
Semi-Annually	Test alarm indicator units.
Semi-Annually	Clean and flush all pressure sensitive devices.
Semi-Annually	Visually inspect all meters to coordinate remote stations.
Annually	Check master and remote telemetry units for proper operation; repair as necessary.

Tools and Equipment

Rolling Stock	
Daily	Check all fluid levels and brakes.
As Needed	Replace fluids and filters in accordance with manufacturer's recommendations (or more frequently depending on type of use).

Tools	
As Needed	Clean after each use; lubricate and maintain as necessary.

STAFFING

The preventive maintenance procedures, as well as the normal and emergency operations of the utility, are described in the previous sections. The hours of labor and supervisory activity required to effectively provide this ongoing maintenance and operations schedule forms the basis for determining adequate staffing levels.

Current Staff

The current staff includes supervisory personnel, maintenance workers, and office personnel engaged in operating and maintaining the utility system. The current staff along with their time available for the water and sewer system is shown in **Table 8-1**. There is currently one Utility Manager with 12 percent of his time available for the water system. There are two members of the field crew, who also work on other utilities, but approximately 0.65 persons are available for the water system. There are various office personnel supporting the water system and they total 0.5 persons available for the water utility. Therefore, the water utility is supported by approximately 1.25 full-time field staff equivalents.

Recommended Staff Level

A water system is a complex assortment of equipment and parts that require both operation and maintenance. The estimated level of effort required to provide effective operation and maintenance in this document is based on a compilation of national standards, such as those provided by the AWWA, and the pro-forma standards provided by similar water systems in the Pacific Northwest.

The available hours of a person during a year are not the total hours worked. There are many hours spent in training, non-work status and other activities that deduct from the 2,080 hours in pay status during a year. The total available hours are typically reduced to 1,540, as shown in **Table 8-4**.

Table 8-4
Annual Available Hours per Person

Time Available Per Year Per Person	
Beginning Hours Available	2,080
Less average vacation of 3 weeks per year	-120
Less average sick leave of 2 weeks per year	-80
Less holidays of 10 days per year	-80
Less average training of 40 hours per year	-40
Less average small tasks other than above of 1 hour per day	-220
Net Total Available Hours Per Year Per Person	1,540

Preventive maintenance is the work performed to keep the water system in the condition necessary to provide the expected service. Preventive maintenance needs are based on the physical composition of the water system. Each component has a preventive maintenance need that ranges from minor to significant. **Table 8-5** provides the detail of the recommended staffing level for the

water system's preventive maintenance program. As shown in **Table 8-5**, approximately 0.4 full-time employees are recommended for the preventive maintenance program.

Table 8-5
Preventive Maintenance Staff Needed

Description	Total Units In System	Frequency (Times/Year)	Time/Unit (Hours)	Time/Year (Hours)
Preventive Maintenance				
Hydrants	70	1	0.57	40
Valves	200	1	0.2	40
Blowoff Assemblies	5	1	1	5
Meters	400	0.1	2	80
Leak Survey of Water Mains	15 miles	1	0.5	7
Flushing Water Mains	15 miles	1	5	73
Booster Pump Station	2	52	2	208
Pressure Reducing Stations	4	1	6	24
Sources	2	1	50	100
Reservoirs	2	1	30	60
Telemetry and Control System	1	1	40	40
Total Hours Required				677
Total Full Time Staff Required	**(based on 1,540 hours per year per person)**			**0.4**

The other component of operations and maintenance staffing is operations. Operations include all activities other than preventive maintenance, such as water meter reading and repair of broken water mains. As a system ages, many of these activities can be expected to increase. Some operations staff demands can be reduced by replacing infrastructure with more efficient technology, such as using an automated meter reading (AMR) system instead of manually reading water meters on a periodic basis. Each technology or equipment upgrade should be analyzed for cost effectiveness. **Table 8-6** provides the recommended staffing level for the water system's operations program. As shown in **Table 8-6**, approximately 2.5 full-time employees are recommended for the operations program.

Table 8-6
Operations Staff Needed

Description	Total Units In System	Frequency (Times/Year)	Time/Unit (Hours)	Time/Year (Hours)
Operations				
Monitor System	1	260	1.5	390
False Alarm Response	1	12	2	24
Meter Reading	400	12	0.1	480
Groundskeeping	9	4	3.3	120
Inventory	1	1	40	40
Meter Repair/Replace	20	1	4	80
Main Breaks	1	4	8	32
System Failures	1	4	8	32
Hydrant Repairs	5	1	8	40
Service Connections	15	1	8	120
Main Connections	2	1	24	48
Water Quality Sampling	1	12	1	12
Administration	1	260	8	2,080
Miscellaneous	1	52	6	312
Total Hours Required				3,810
Total Full Time Staff Required	**(based on 1,540 hours per year per person)**			**2.5**

To achieve the level of operations and maintenance shown in **Table 8-7**, approximately 2.9 full-time personnel are required for the water system alone. The SITC's current available staff is lacking 1.65 FTE to meet these requirements. In addition, as the water system expands in the future, additional review of staffing needs will be required. The SITC plans to add staff to optimize preventive maintenance and operations and meet the additional requirements from system expansion, as the budget allows.

Table 8-7
Total Staffing Recommendation

Total Staff Recommended		
Preventive Maintenace Hours		677
Operations Hours		3,810
Total Hours		4,487
Total Full Time Staff Required	**(based on 1,540 hours per year per person)**	**2.9**

Water System Improvements

9

INTRODUCTION

This chapter presents proposed improvements to the Swinomish Indian Tribal Community (SITC) water system that are necessary to resolve existing system deficiencies and accommodate the projected growth in the number of water customers. The water system improvements were identified in an evaluation of the results of the water system analyses presented in Chapter 7. The water system improvements were sized to meet both the existing and future demand conditions of the system.

A Capital Improvement Program number, herein referred to as a CIP number, has been assigned to each improvement. Numbers assigned to the improvements start at the north end of the system and generally increase incrementally to the south, as shown in **Figure 9-1**, a plan view of the improvements. The improvements are organized into following categories.

- Water Main Improvements
- Pressure Zone Improvements
- Pressure Reducing Station Improvements
- Miscellaneous Improvements

The remainder of this chapter presents a brief description of each group of improvements, the prioritization criteria, the basis for the cost estimates and the implementation schedule.

DESCRIPTION OF IMPROVEMENTS

This section provides a general description of each group of improvements and an explanation of the deficiencies they will resolve. Most of the improvements are necessary to resolve existing system deficiencies. However, improvements have also been identified for some of the undeveloped areas of the 188 and 323 zones to illustrate the major facilities that will be required when development occurs in those areas. The locations of improvements in the undeveloped areas are shown schematically in Figure 9-1 and will most likely be altered to fit the layout of future developments.

Water Main Improvements

The following water main improvements were identified in the results of the distribution and transmission system analyses discussed in **Chapter** 7. Most of the water main improvements will replace existing distribution water main. These improvements are necessary to provide the SITC existing planning-level fire flow at all locations throughout the distribution system.

CIP WM1: Annual Water Main Replacement Program

Deficiency: Most of the water main improvements shown in **Figure 9-1** are required to resolve existing system fire flow deficiencies caused primarily by older, undersized water mains installed prior to the STIC's adoption of fire flow requirements. The existing general planning-level fire flow requirements for each land use category are described in **Chapter 5**.

Improvement: Replace existing water main with new PVC water main in accordance with the SITC Developer Standards for the Construction of Water Main Facilities, which are contained in **Appendix F**. The individual water main improvements grouped under this project are numbered 1, 2, 3, etc., as shown in **Figure 9-1** and described in detail in the following sections. The selection of specific projects will be accomplished annually during the SITC's budget development process and will be guided by the prioritization presented later in this chapter. This provides the SITC with the flexibility to coordinate these projects with other projects that may occur within the same area.

CIP WM1-1: Reservation Road Water Main from Snee Oosh Road to Reservation Lane

Deficiency: The existing transmission main is constructed of 8-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Reservation Road with new 12-inch PVC water main from Snee Oosh Road to Reservation Lane.

CIP WM1-2: Reservation Road Water Main from Reservation Lane to Indian Road

Deficiency: The existing transmission main is constructed of 6-inch and 8-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Reservation Road with new 12-inch PVC water main from Reservation Lane to Indian Road.

CIP WM1-3: Indian Road Water Main from Reservation Road to Tallawhalt Way

Deficiency: The existing transmission main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Indian Road with new 12-inch PVC water main from Reservation Road to Tallawhalt Way.

CIP WM1-4: Tallawhalt Way Water Main from Tallawhalt Lane to Reservation Road

Deficiency: Tallawhalt water main must be connected to the existing system and convey water supply to the lower 188 Zone from the Tallawhalt development.

Improvement: Install new 12-inch PVC water main in Tallawhalt Way from Tallawhalt Lane to Reservation Road.

CIP WM1-5: Indian Road Water Main from Tallawhalt Way to the Main Reservoir

Deficiency: The existing transmission main is constructed of 6-inch and 8-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Indian Road with new 12-inch PVC water main from Tallawhalt Way to the Main Reservoir.

CIP WM1-6: Reservation Road Water Main from Tallawhalt Way to Snee Oosh Road

Deficiency: Water main will be needed to connect to the existing system and convey water supply to the lower 188 Zone from the Tallawhalt development.

Improvement: Install new 12-inch PVC water main in Reservation Road from Tallawhalt Way to Snee Oosh Road.

CIP WM1-7: Chilberg Avenue Water Main from Island View Lane to Snee Oosh Road

Deficiency: Looping in the 184 Zone is needed to increase water quality by eliminating a long dead-end water main.

Improvement: Install new 8-inch PVC water main in Chilberg Avenue from Island View Lane to Snee Oosh Road.

CIP WM1-8: Squi Qui Lane Water Main from Tallawhalt Lane to Snee Oosh Road

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Squi Qui Lane with new 12-inch PVC water main from Tallawhalt Lane to Snee Oosh Road.

CIP WM1-9: Indian Road Water Main from the Main Reservoir to Snee Oosh Road

Deficiency: The existing transmission main is constructed of 8-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Indian Road with new 12-inch PVC water main from the Main Reservoir to Snee Oosh Road.

CIP WM1-10: Sunset Drive Water Main from Maple Lane to Goldenview Avenue

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Sunset Drive with new 8-inch PVC water main from Maple Lane to Goldenview Avenue.

CIP WM1-11: Sunset Drive Water Main from Snee Oosh Road to Maple Lane

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Sunset Avenue with new 8-inch PVC water main from Snee Oosh Road to Maple Lane.

CIP WM1-12: Snee Oosh Road Water Main from Indian Road to the Village PRV

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Snee Oosh Road with new 12-inch PVC water main from Indian Road to the Village PRV.

CIP WM1-13: Snee Oosh Road Water Main from the Village PRV to Squi Qui Lane

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Snee Oosh Road with new 12-inch PVC water main from the Village PRV to Squi Qui Lane.

CIP WM1-14: Goldenview Avenue Water Main from Sunset Drive to Ray Paul Lane

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Goldenview Avenue with new 8-inch PVC water main from Sunset Drive to Ray Paul Lane.

CIP WM1-15: Indian Road Water Main from Snee Oosh Road to Fern Lane

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Indian Road with new 8-inch PVC water main from Snee Oosh Road to Fern Lane.

CIP WM1-16: Snee Oosh Road Water Main from Squi Qui Lane to Front Street

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Snee Oosh Road with new 12-inch PVC water main from Squi Qui Lane to Front Street.

CIP WM1-17: Avenue A Water Main from First Street, west to Existing Hydrant

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Avenue A with new 8-inch PVC water main from First Street, west to the existing hydrant.

CIP WM1-18: First Street Water Main from Snee Oosh Road to Swinomish Avenue

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in First Street with new 12-inch PVC water main from Snee Oosh Road to Swinomish Avenue.

CIP WM1-19: Pioneer Parkway Water Main from Snee Oosh Road to Shelter Bay Drive

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Pioneer Parkway with new 12-inch PVC water main from Snee Oosh Road to Shelter Bay Drive.

CIP WM1-20: Front Street Water Main from Snee Oosh Road to Moorage Way

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Front Street with new 12-inch PVC water main from Snee Oosh Road to Moorage Way.

CIP WM1-21: First Street Water Main from Swinomish Avenue to Shelter Bay Drive

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in First Street with new 12-inch PVC water main from Swinomish Avenue to Shelter Bay Drive.

CIP WM1-22: Shelter Bay Drive Water Main from First Street to Pioneer Parkway

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Shelter Bay Drive with new 12-inch PVC water main from First Street to Pioneer Parkway.

CIP WM1-23: Moorage Way Water Main from Pioneer Parkway to the Fish Plant

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Moorage Way with new 12-inch PVC water main from Pioneer Parkway to the Fish Plant.

CIP WM1-24: Ray Paul Lane Water Main from Goldenview Avenue to Nanna Lane

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Ray Paul Lane with new 8-inch PVC water main from Goldenview Avenue to Nanna Lane.

CIP WM1-25: Nanna Lane Water Main from Ray Paul Lane to Cobahud Lane

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Nanna Lane with new 8-inch PVC water main from Ray Paul Lane to Cobahud Lane.

CIP WM1-26: Cobahud Lane Water Main from Nanna Lane to Pull and Be Damned Road

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Cobahud Lane with new 8-inch PVC water main from Nanna Lane to Pull and Be Damned Road.

CIP WM1-27: Pull and Be Damned Road Water Main from Cobahud Road to Capet Zalsiluce Road

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Pull and Be Damned Road with new 8-inch PVC water main from Cobahud Road to Capet Zalsiluce Road.

CIP WM1-28: Capet Zalsiluce Road Water Main from Pull and Be Damned Road to Indian Road

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Capet Zalsiluce Road with new 8-inch PVC water main from Pull and Be Damned Road to Indian Road.

CIP WM1-29: Indian Road Water Main from Pull and Be Damned Road to the Pull and Be Damned Reservoir

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Indian Road with new 8-inch PVC water main from Pull and Be Damned Road to the Pull and Be Damned Reservoir.

CIP WM1-30: Capet Zalsiluce Road Water Main from Indian Road to Dr. Joe Road

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Capet Zalsiluce Road with new 8-inch PVC water main from Indian Road to Dr. Joe Road.

CIP WM1-31: Dr. Joe Road Water Main from Capet Zalsiluce Road to Pull and Be Damned Road

Deficiency: The existing water main is constructed of 6-inch pipe and is undersized for existing system needs.

Improvement: Replace the existing water main in Dr. Joe Road with new 8-inch PVC water main from Capet Zalsiluce Road to Pull and Be Damned Road.

Future Water Main Extensions and Replacements

All new water main extensions and replacements shall be installed in accordance with the SITC's Developer Standards for the Construction of Water Main Facilities, which are included in **Appendix F**. All new water mains shall be C900 PVC pipe and sized by hydraulic analysis to ensure that all pressure, flow and velocity requirements stated in **Chapter 5** are met. In general, new water mains that will carry fire flow in residential areas shall be a minimum of 8 inches in diameter and looped. New water mains in Swinomish Village shall be a minimum of 12 inches in diameter and looped.

Pressure Zone Improvements

The following pressure zone improvements will increase low pressure problems in areas throughout the water system. Brief descriptions of the existing deficiencies and the improvements to address these deficiencies are provided below.

CIP PZ1: 296, 323 and 328 Zone Conversion to 415 Zone

Deficiency: A portion of the 296 and 323 zones, in the higher elevations along Reservation Road and Indian Road, has low pressure that is not meeting the minimum pressure requirements. In addition, the storage analysis indicates that the system has insufficient capacity to meet the existing and projected future storage requirements.

Improvement: Convert the area along Reservation Road and Indian Road, from the northerly intersection of Reservation Road and Snee Oosh Road to the intersection of Indian Road and Snee Oosh Road, to the 415 Zone by constructing a new booster pump station near the northerly intersection of Reservation Road and Snee Oosh Road. Construct a building for the booster pump station with all necessary mechanical and electrical equipment. The actual capacity and configuration of the pump station will be determined during the preliminary design phase of the project. The facility shall include a power receptacle to enable connection of a portable generator to provide power in the event of a power outage. Abandon the Main Booster Pump Station and convert Reservation Lane to the 415 Zone by abandoning the Reservation Lane Booster Pump Station.

Construct a new 415 Zone reservoir with an overflow elevation of 415 feet and a minimum useful storage capacity of 573,000 gallons to meet the projected needs of the system through the 20-year planning period. Demolish the existing Main Reservoir. It is anticipated that the new reservoir will be located at the Main Reservoir site or on the property to the south of Tallawhalt Way, between Indian Road and Squi Qui Lane.

Install a pressure reducing station in Tallawhalt Way between Indian Road and Squi Qui Lane and another in Indian Road near the intersection of Snee Oosh Road to supply the 323 Zone from the 415 Zone. The large pressure reducing valves in each station shall be 8-inch valves and the small valves shall be 3-inch valves. The stations should also include a pressure relief valve to relieve pressures in the 323 Zone in the event that a control valve fails in the open position.

CIP PZ2: 188 Zone Conversion to 198 Zone

Deficiency: A portion of the 188 Zone, in the higher elevations east of the Village PRV, has moderately low pressures.

Improvement: Convert the 188 Zone to the 198 Zone by adjusting the setpoints of the valves in the Village PRV.

Pressure Reducing Station Improvements

The following pressure reducing station improvements were identified to resolve existing system deficiencies, but have been sized to accommodate the system's future demands.

CIP PRV1: Reservation Road PRV

Deficiency: Once CIP WM1-4 and WM1-6 are completed, a PRV will be needed to reduce pressures from the Tallawhalt area to acceptable levels for supplying the 188 Zone.

Improvement: Install a pressure reducing station in Reservation Road near the intersection of Tallawhalt Way. The large pressure reducing valve shall be an 8-inch valve and the small valve shall be a 3-inch valve. The station should also include a pressure relief valve to relieve pressures in the 188 Zone in the event that a pressure reducing station control valve fails in the open position.

CIP PRV2: 184 and 210 Zone Pressure Relief

Deficiency: The existing 184 and 210 zones do not have pressure relief facilities to prevent over-pressurization in the event that a pressure reducing station control valve fails in the open position.

Improvement: Install new pressure relief stations or modify the existing Sunset Drive and Shorewood Drive PRVs to include a pressure relief valve.

Miscellaneous Improvements

The following miscellaneous improvements are planning efforts and program elements that are recommended to comply with various State of Washington water regulations. In addition, general operational improvements are identified as miscellaneous improvements.

CIP M1: Storage Tank Cleaning and Inspection

Deficiency: SITC's existing storage tanks require periodic inspections and cleaning to maintain the integrity of the structures.

Improvement: Inspect the interior and exterior of each storage tank and determine where cleaning or other improvements are required. Clean and improve the tanks as necessary. Conduct a seismic analysis of the existing tanks to determine any structural deficiencies. Based on the results of the analysis, construct necessary seismic improvements to comply with current codes.

CIP M2: Telemetry System Upgrade

Deficiency: SITC's existing telemetry system is out of date and no technical support is currently available for the system.

Improvement: Design and install a new telemetry system for all major supply and storage facilities within the system.

CIP M3: Water-Use Efficiency Program

Deficiency: Several water use efficiency measures should be carried out on an ongoing basis to comply with state requirements.

Improvement: The SITC will consider a rate structure that further discourages excess water use. A detailed program to establish standard methods for tracking non-revenue authorized consumption will also be considered. The SITC will perform other ongoing water use efficiency measures, including public education programs, as outlined in the **Chapter 4**.

CIP M4: Cross-Connection Control Program

Deficiency: The SITC does not have a cross-connection control program that meets current state requirements.

Improvement: The SITC will develop and implement an evaluation program that assesses the risk of existing water service connections. Potential high-risk cross-connection premises will be evaluated first. The SITC will then evaluate other premises, based on potential risk to the water system and budget availability. The SITC will consider other cross-connection control requirements as outlined in WAC Chapter 246-290.

CIP M5: Comprehensive Water System Plan Update

Deficiency: WAC 246-290-100 requires that water system plans be updated every six years and submitted to the Washington State Department of Health (DOH) for review and approval. The SITC will use this regulation as a guideline for determining when its WSP will be updated.

Improvement: The SITC will update and submit its Comprehensive Water System Plan to the DOH every 6 years to comply with state requirements.

ESTIMATING COSTS OF IMPROVEMENTS

Project costs for the proposed improvements were estimated based on costs of similar, recently constructed water projects in the SITC and around the Puget Sound area, and are presented in 2011 dollars. The cost estimates include the estimated construction cost of the improvement and indirect costs, estimated at 35 percent of the construction cost, for engineering preliminary design; final design and construction management services; permitting; and legal and administrative services. The construction cost estimates include a 10 percent contingency and sales tax of 8.2 percent.

Construction cost estimates for water main projects were determined using the water main unit cost for PVC pipe (i.e., cost per foot length) shown in **Table 9-1** and the proposed diameter and approximate length of each improvement.

Table 9-1
Water Main Unit Costs

Water Main Diameter (inches)	Construction Cost Per Foot Length (2011 $/LF)
8	$100
12	$130

The unit costs for each water main size are based on estimates of all construction related improvements, such as materials and labor, for the water main installation, water services, fire hydrants, fittings, valves, connections to the existing system, trench restoration, asphalt surface restoration and other work necessary for a complete installation. The unit costs also include a contingency and sales tax.

PRIORITIZING IMPROVEMENTS

The water system improvements were prioritized from established criteria to formulate a schedule that identifies projects with the most deficiencies and greatest need for improvement to be completed prior to projects with fewer deficiencies. A description of the criteria and method for prioritizing each category of improvements is provided below.

Water Main Improvements

Table 9-2 lists criteria that were established for prioritizing the water main improvements. The criteria are based on the underlying deficiencies of the existing water main that will be replaced by the proposed water main improvements. The criteria are arranged in two different categories with a weight factor assigned to each category. The criterion given the most weight is the Existing Water Main Fire Flow Capability.

The Existing Water Main Fire Flow Capability category ranks the water main improvements based on the ability of the existing water mains to provide the required fire flow, as determined from the results of the hydraulic analyses in **Chapter 7**. The Existing Water Main Benefit Area category ranks the water main improvements based on the size of the area that will benefit from the replacement.

Table 9-2
Water Main Improvements Priority Ranking Criteria

Points	Category	Weight Factor	Weighted Points
	Existing Water Main Fire Flow Capability		
3	Available Fire Flow is 64% or Less of Required Fire Flow	4	12
2	Available Fire Flow is 65-89% of Required Fire Flow	4	8
1	Available Fire Flow is 90-100% or More of Required Fire Flow	4	4
	Existing Water Main Benefit Area		
3	Large Benefit Area (i.e. transmission main)	2	6
2	Medium Benefit Area	2	4
1	Small Benefit Area (i.e. localized area)	2	2

The water main priority ranking criteria were applied to the annual water main replacement projects, which are grouped under CIP WM1. CIP 1 through 31 are presented in **Table 9-3** with their priority rankings.

Table 9-3

Prioritized Annual Water Main Replacement Projects

No.	Size		Description			Estimated	Priority[1]
	Length	Diam	In	From	To	Cost	
1	2,200	12	Reservation Rd	Snee Oosh Rd	Reservation Ln	$386,000	H
2	6,600	12	Reservation Rd	Reservation Ln	Indian Rd	$1,158,000	H
3	9,200	12	Indian Rd	Reservation Rd	Tallawhalt Wy	$1,615,000	H
4	1,700	12	Tallawhalt Wy	Tallawhalt Ln	Reservation Rd	$298,000	M
5	1,100	12	Indian Rd	Tallawhalt Wy	Main Reservoir	$193,000	M
6	1,900	12	Reservation Rd	Tallawhalt Wy	Snee Oosh Rd	$333,000	H
7	400	8	Chilberg Ave	Snee Oosh Rd	Island View Ln	$54,000	H
8	750	12	Squi Qui Ln	Tallawhalt Ln	Snee Oosh Rd	$132,000	H
9	850	12	Indian Rd	Main Reservoir	Snee Oosh Rd	$149,000	M
10	240	8	Sunset Dr	Maple Ln	Goldenview Ave	$32,000	L
11	220	8	Sunset Dr	Snee Oosh Rd	Maple Ln	$30,000	M
12	2,800	12	Snee Oosh Rd	Indian Rd	Village PRV	$491,000	H
13	1,400	12	Snee Oosh Rd	Village PRV	Squi Qui Ln	$246,000	M
14	1,850	8	Goldenview Ave	Sunset Dr	Ray Paul Ln	$250,000	L
15	950	8	Indian Rd	Snee Oosh Rd	Fern Ln	$128,000	M
16	1,200	12	Snee Oosh Rd	Squi Qui Ln	Front St	$211,000	H
17	250	8	Avenue A	First St west	Existing Hydrant	$34,000	M
18	550	12	First St	Snee Oosh Rd	Swinomish Ave	$97,000	H
19	1,200	12	Pioneer Pkwy	Snee Oosh Rd	Shelter Bay Dr	$211,000	H
20	900	12	Front St	Snee Oosh Rd	Moorage Wy	$158,000	H
21	700	12	First St	Swinomish Ave	Shelter Bay Dr	$123,000	H
22	350	12	Shelter Bay Dr	First St	Pioneer Pkwy	$61,000	H
23	650	12	Moorage Wy	Pioneer Pkwy	Fish Plant	$114,000	H
24	920	8	Ray Paul Ln	Goldenview Ave	Nanna Ln	$124,000	M
25	670	8	Nanna Ln	Ray Paul Ln	Cobahud Ln	$90,000	L
26	1,000	8	Cobahud Rd	Nanna Ln	Pull and Be Damned Rd	$135,000	L
27	250	8	Pull and Be Damned Rd	Cobahud Rd	Capet Zalsiluce Rd	$34,000	L
28	1,060	8	Capet Zalsiluce Rd	Pull and Be Damned Rd	Indian Rd	$143,000	L
29	1,175	8	Indian Rd	Pull and Be Damned Rd	Pull and Be Damned Reservoir	$159,000	L
30	420	8	Capet Zalsiluce Rd	Indian Rd	Dr. Joe Rd	$57,000	M
31	1,200	8	Dr. Joe Rd	Capet Zalsiluce Rd	Pull and Be Damned Rd	$162,000	M
Total - Annual Water Main Replacement Projects						**$7,408,000**	

1 = Priority: H = High, M = Medium, L = Low

Other Improvements

The additional water main, pressure zone, pressure reducing station and facility improvements were prioritized based on existing deficiencies, safety concerns, and maintenance and capacity requirements. Improvements to resolve pressure and storage deficiencies identified in **Chapter 7** were given the highest priority; therefore, they were scheduled for completion within the 6-year planning period. Miscellaneous improvements were prioritized based on regulatory requirements, funding availability and an assessment of other water system needs. The priority order of these improvements is reflected in the schedule of improvements presented in the next section.

SCHEDULE OF IMPROVEMENTS

The improvement prioritization results were used to assist in establishing an implementation schedule that can be used by the SITC for preparing its 6-year CIP and yearly water budget. The implementation schedule for the proposed improvements is shown in **Table 9-4**. Due to the large PZ1 project scheduled for 2012 through 2013, the annual water main replacement projects were scheduled beyond the initial 6-year planning period. An allowance of $200,000 per year has been established for the annual replacement of water mains for the planning periods starting in 2016. This provides the SITC with the flexibility to coordinate these projects with road or other projects in the same areas.

Future Project Cost Adjustments

All cost estimates shown in the tables are presented in year 2011 dollars. Therefore, it is recommended that future costs be adjusted to account for the effects of inflation and changing construction market conditions at the actual time of project construction. Future costs can be estimated using the Engineering News Record (ENR) Construction Cost Index for the Seattle area or by applying an estimated rate of inflation that reflects the current and anticipated future market conditions.

Table 9-4
Proposed Improvements Implementation Schedule

No.	Description	Estimated Cost (2011 $$)	2011	2012	2013	2014	2015	2016	2017-22	2023-30	+20yrs
	Water Main Improvements										
WM1	Water Main Improvements	$7,408,000	$0K	$0K	$0K	$0K	$0K	$0K	$1,200K	$1,600K	$4,608K
	Pressure Reducing Station and Relief Improvements										
PRV1	Reservation Rd PRV	$75,000		$75K							
PRV2	184 and 210 Zone Pressure Relief	$45,000							$45K		
	Pressure Zone Improvements										
PZ1	296, 323 and 328 Zone Conversion to 415 Zone	$1,806,000			$602K	$602K	$602K				
PZ2	188 Zone Conversion to 198 Zone	$9,000		$9K							
	Miscellaneous Improvements										
M1	Storage Tank Cleaning and Inspection	$49,000	$1K	$1K	$1K	$1K	$1K	$1K	$5K	$38K	
M2	Telemetry System Upgrade	$200,000	$200K								
M3	Conservation Program and Leak Detection	$19,000	$1K	$1K	$1K	$1K	$1K	$1K	$5K	$8K	
M4	Cross-Connection Control Program	$37,000		$3K	$2K	$2K	$2K	$2K	$10K	$16K	
M5	Comprehensive Water System Plan Update (every 6 years)	$360,000							$120K	$240K	
Total Estimated Project Costs of District Funded Improvements		**$10,008,000**	**$202K**	**$89K**	**$606K**	**$606K**	**$606K**	**$4K**	**$1,385K**	**$1,902K**	**$4,608K**

Padilla Bay
Anacortes Interties
Stevenson Road
Similk Bay Road
Turners Bay
296 Zone
Proposed 415 Zone Booster Pump Station
PZ1
Similk Bay
Shee Oosh Road
Reservation Road
Well #3 and Well #2
Fornsby Creek
415 Zone
Swinomish Channel
Munks Creek
Kiket Bay
Lone Tree Creek
Indian Road
Snee Oosh Creek
184 Zone
Dan Road
Proposed Tallawhalt Way PRV
Tallawhalt Way
Proposed Reservation Road PRV
PRV1
Proposed 415 Zone Reservoir Overflow Elevation: 415'
Squi-Qui PRV
PZ2
Shorewood PRV
PRV2
Westshore PRV
Snee Oosh Road
Proposed Indian Road PRV
Village PRV
198 Zone
323 Zone
Shelter Bay Intertie
Ray Paul Lane
Pull and Be Damned Road
210 Zone
Pull and Be Damned Reservoir Overflow Elevation: 216'
Skagit Bay
Marthas Bay

Legend

- Exterior Boundary of the Reservation
- Existing Water Service Area
- Swinomish UGA*

Water Infrastructure

- Intertie
- Well
- PRV
- Pump
- Reservoir

Water Main

- 184 Zone
- 198 Zone
- 210 Zone
- 296 Zone
- 323 Zone
- 415 Zone
- Proposed CIP WM1 Improvements

Pressure Zone

- 184 Zone
- 198 Zone
- 210 Zone
- 296 Zone
- 323 Zone
- 415 Zone

Proposed Water System Improvements

- # WM1 - Annual Water Main Replacement Program
- PZ# Pressure Zone Improvements
- PRV# Pressure Reducing Station Improvements

*Excerpt from Skagit County Comprehensive Plan Map.

N
W E
S

1 in = 1,200 ft

0 1,200 2,400

DRAWING IS NOT TO SCALE
IF BAR IS NOT 2" LONG

SWINOMISH INDIAN TRIBAL COMMUNITY

SWINOMISH INDIAN TRIBAL COMMUNITY

COMPREHENSIVE WATER SYSTEM PLAN

FIGURE 9-1
PROPOSED WATER SYSTEM IMPROVEMENTS

J:\Data\SIT\406-061\GIS\MAPS\SIT-WSP-Fig9-1.mxd DATE REVISED: 12/8/2011 BY: KDS

Financial Program

10

INTRODUCTION

The purpose of the financial program is to provide reasonable assurance that the Swinomish Indian Tribal Community (SITC) will have the financial ability to maintain and operate the water system on an on-going basis, and also has the capacity to obtain sufficient funds to construct the water system improvements as identified in **Chapter 9**.

WATER RATES AND PAST FINANCIAL RECORDS

The water rates for the SITC are based on both a monthly meter charge and a commodity charge based on water use as the water system is fully metered. For 2011, the base rate for residential customers is $22 per month and the base rate for non-residential customers is $40 per month. The base rate does not include any water usage. For both residential and non-residential customers, the usage rate is $1.25 per one hundred cubic feet (cf) of metered water use.

Past financial records for the water system were reviewed for the years 2007 through 2010. The SITC obtains nearly all of its operating revenue from water sales. In general, water rate revenues have covered operating expenses. Past financing of water system improvements has been in the form of grants from federal government agencies, including the Indian Health Services and Housing and Urban Development (HUD). The grant money has funded projects that serve homes occupied by Native American families. Projects that have served primarily non-Native American families were funded by levying costs on homeowners through a Reservation Utility Improvement District. The SITC does not currently have outstanding water system debt.

PROPOSED CAPITAL IMPROVEMENT FUNDING

Revenues from water sales will continue to support the operations and maintenance of the water system. The SITC will need to explore funding sources to complete the improvements in the Capital Improvement Plan (CIP) from **Chapter 9**. It is assumed that the SITC could seek grant and loan funding for these improvements from various government agencies. Possible funding programs include the Indian Health Services, HUD Community Development Block Grant and the U.S. Department of Agriculture (USDA) Rural Development Program. When grants and low interest loans are not available, the SITC will need to consider bank loans or the issuance of bonds. Repaying the loans or bonds will require increased user rates.

Based on the SITC's history of obtaining grant funds from Indian Health Services and HUD, it is assumed that a portion of the proposed CIP will be funded by reserves and grant funds, as shown in the operating budget presented in **Table 10-1**. The SITC will need to obtain loans or issue bonds to fund the portions of the CIP that is not funded by grants and reserves. An annual assessment of the budget will be necessary based on the actual availability of grants, loans and reserve funds. A more detailed operating budget and financial program will be necessary when the source of funding for the CIP Pressure Zone Improvement No. 1 (PZ1), which includes a reservoir and booster pump station, is known.

The six-year operating budget presented in **Table 10-1** assumes the following:

1. Projected water sales are provided in **Table 10-2.** Water sales are based on the projected growth rates developed in **Chapter 3** and assumed rate increases as shown in the table.
2. Estimated expenses have been escalated from the 2010 budget at 3 percent per year for general cost inflation.
3. Grants are projected for all improvements equal to or less than $300,000 annually.
4. Future loan payments are based on a 20-year payback period and 5 percent interest.
5. Capital improvement expenditures are in accordance with the CIP and are adjusted by 3 percent per year for general cost inflation.
6. Connection charges are based on the number of projected connections and a connection charge of $2,500 per connection. A facilities charge analysis is recommended to determine the appropriate future connection charge.

PROPOSED WATER RATES

The proposed water rates as shown in **Table 10-2** are based on providing operations and maintenance for the water system as well as the estimated loan payments associated with CIP PZ1. The proposed rates are based on expenses, which are estimated to increase at a rate of 3 percent per year. For planning purposes, it is recommended that rate increases in both the base meter charge and the commodity charge increase by 3 percent per year for the purpose of developing both operating and emergency reserves and covering the projected increase in operating costs. An additional 7 percent rate increase per year is necessary to cover the estimated loan payments for CIP PZ1. With a total rate increase of 10 percent annually, the residential meter charge will be $35.43, the commercial meter charge will be $64.42 and the commodity charge will be $2.01 per 100 cf by 2016. If the SITC receives loans or issues bonds with different terms than identified within these analyses, different rate adjustments may be necessary. A detailed financial analysis is recommended for setting future water rates.

Table 10-1
Six-Year Cash Flow Operating Budget

Description	2010	2011	2012	2013	2014	2015	2016
REVENUE							
Water Sales	$163,711	$170,047	$190,379	$213,265	$238,827	$267,598	$299,738
Other Revenue							
TOTAL REVENUE	**$163,711**	**$170,047**	**$190,379**	**$213,265**	**$238,827**	**$267,598**	**$299,738**
EXPENSES							
Employee Payroll							
Maintenance Salaries	$41,933	$36,195	$37,281	$38,399	$39,551	$40,738	$41,960
Administrative Salaries	$27,596	$29,603	$30,491	$31,406	$32,348	$33,318	$34,318
Benefits	$23,162	$21,052	$21,684	$22,334	$23,004	$23,694	$24,405
Total Payroll	$92,691	$86,850	$89,456	$92,139	$94,903	$97,750	$100,683
Operation and Maintenance							
Rentals	$2,000	$2,000	$2,060	$2,122	$2,185	$2,251	$2,319
Maintenance Supplies/Reserves	$4,446	$8,983	$9,252	$9,530	$9,816	$10,110	$10,414
Water Testing	$489	$2,400	$2,472	$2,546	$2,623	$2,701	$2,782
Anacortes Water	$41,754	$36,000	$37,080	$38,192	$39,338	$40,518	$41,734
Telemetry	$487	$600	$618	$637	$656	$675	$696
Electricity	$3,991	$5,400	$5,562	$5,729	$5,901	$6,078	$6,260
Treatment	$1,305	$3,000	$3,090	$3,183	$3,278	$3,377	$3,478
Contract Maintenance	$7,257	$3,000	$3,090	$3,183	$3,278	$3,377	$3,478
Total Operation & Maintenance	$61,729	$61,383	$63,224	$65,121	$67,075	$69,087	$71,160
General and Administrative							
Office Supplies/Postage	$876	$2,100	$2,163	$2,228	$2,295	$2,364	$2,434
Yearly Dues and Publications	$87	$150	$155	$159	$164	$169	$174
Training/Travel	$760	$900	$927	$955	$983	$1,013	$1,043
Communication	$248	$600	$618	$637	$656	$675	$696
Audits and Accounting Fees	$2,200	$2,500	$2,575	$2,652	$2,732	$2,814	$2,898
Professional Services	$1,389	$1,500	$1,545	$1,591	$1,639	$1,688	$1,739
Vehicle/Equipment Repair	$10,616	$6,000	$6,180	$6,365	$6,556	$6,753	$6,956
Office/Equipment Rental	$0	$3,000	$3,090	$3,183	$3,278	$3,377	$3,478
Other Expenses	$562	$0	$0	$0	$0	$0	$0
Total General & Administrative	$16,736	$16,750	$17,253	$17,770	$18,303	$18,852	$19,418
TOTAL EXPENSES	**$171,156**	**$164,983**	**$169,932**	**$175,030**	**$180,281**	**$185,690**	**$191,261**
Annual Debt Payments							
Loan Principal & Interest	$0	$0	$0	$29,000	$64,000	$100,000	$100,000
Annual Pmt from Operating Revenue	**$0**	**$0**	**$0**	**$29,000**	**$64,000**	**$100,000**	**$100,000**
Capital Improvement Program Expenditures							
Water System Replacement	$0	$0	$0	$0	$0	$0	$0
Capital Improvements	$0	$0	$86,520	$638,120	$656,180	$674,240	$0
Non-Facility Costs	$0	$202,000	$5,150	$4,240	$4,360	$4,480	$4,600
Total CIP Expenditures	**$0**	**$202,000**	**$91,670**	**$642,360**	**$660,540**	**$678,720**	**$4,600**
Capital Sources							
Loan/Bond Funds	$0	$0	$0	$290,000	$350,000	$360,000	$0
Grants	$0	$200,000	$91,670	$300,000	$300,000	$300,000	$4,600
Connection Charges	$10,000	$17,500	$20,000	$20,000	$20,000	$20,000	$20,000
Withdrawal fr Ex. Reserves	$0	$0	$0	$0	$0	$0	$0
Withdrawal fr Ops Reserves	$0	$0	$0	$50,000	$30,000	$50,000	$0
Total Capital Sources	$10,000	$217,500	$111,670	$660,000	$700,000	$730,000	$24,600
Net CIP from Capital Sources	**-$10,000**	**-$15,500**	**-$20,000**	**-$17,640**	**-$39,460**	**-$51,280**	**-$20,000**
Capital Improvement Fund							
Beginning Balance	$0	$10,000	$25,500	$45,500	$63,140	$102,600	$153,880
Additions (Withdrawals)	$10,000	$15,500	$20,000	$17,640	$39,460	$51,280	$20,000
Ending Balance	$10,000	$25,500	$45,500	$63,140	$102,600	$153,880	$173,880
Operating Cash Reserve							
Minimum Balance	$21,394	$20,623	$21,242	$21,879	$22,535	$23,211	$23,908
Annual Installment	$0	$0	$0	$0	$0	$0	$0
Transfer to Capital Funding	$0	$0	$0	$50,000	$30,000	$50,000	$0
Prior Year Surplus	$0	$2,556	$20,564	$38,946	$25,375	$32,506	$31,688
Running Balance	$167,832	$170,388	$190,952	$179,898	$175,273	$157,779	$189,468
Emergency Reserve							
Minimum Balance	$7,500	$7,500	$7,500	$7,500	$7,500	$7,500	$7,500
Annual Installment	$0	$0	$1,500	$1,500	$1,500	$1,500	$1,500
Running Balance	$0	$0	$1,500	$3,000	$4,500	$6,000	$7,500
Replacement Reserve (optional)							
Target Balance	$0	$0	$0	$0	$0	$0	$0
Annual Installment	$0	$0	$0	$0	$0	$0	$0
Running Balance	$0	$0	$0	$0	$0	$0	$0
TOTAL REVENUE REQUIREMENT	**$161,156**	**$149,483**	**$151,432**	**$187,890**	**$206,321**	**$235,910**	**$272,761**
BUDGET SURPLUS (DEFICIT)	**$2,556**	**$20,564**	**$38,946**	**$25,375**	**$32,506**	**$31,688**	**$26,977**

Table 10-2
Proposed Rates and Projected Water Sales

Description	2011	2012	2013	2014	2015	2016
Number of Service Connections						
Residential	411	419	427	435	443	452
Non-residential	20	20	20	20	20	20
Total	**431**	**439**	**447**	**455**	**463**	**472**
Annual Base and Consumption Increase		**10%**	**10%**	**10%**	**10%**	**10%**
Base Meter Charge per Month*						
Residential Meter Charge	$22.00	$24.20	$26.62	$29.28	$32.21	$35.43
Non-residential Meter Charge	$40.00	$44.00	$48.40	$53.24	$58.56	$64.42
Meter Revenue						
Residential	$108,534	$121,607	$136,334	$152,793	$171,331	$192,052
Non-residential Revenue	$9,600	$10,560	$11,616	$12,778	$14,055	$15,461
Total Base Meter Revenue	**$118,134**	**$132,167**	**$147,950**	**$165,570**	**$185,387**	**$207,513**
Annual Consumption Estimate (100's of cf)	41,531	42,336	43,184	44,031	44,921	45,812
Commodity Charge (per 100 cf)	$1.25	$1.38	$1.51	$1.66	$1.83	$2.01
Commodity Revenue	$51,913	$58,212	$65,315	$73,257	$82,212	$92,225
Total Projected Revenue	**$170,047**	**$190,379**	**$213,265**	**$238,827**	**$267,598**	**$299,738**
Avg. Revenue per Customer/month	$32.87	$36.16	$39.78	$43.76	$48.14	$52.95
Avg. Revenue per Customer/year	$394.44	$433.91	$477.33	$525.09	$577.64	$635.44
*Base meter charge does not include any use.						

FINANCIAL VIABILITY TEST WORKSHEET SUBMITTALS

If outside funding is secured as shown in **Table 10-1**, then it is demonstrated by the Financial Viability worksheets that the SITC's water system is financially viable for the future. The projected revenues allow for both on-going maintenance, operations and sufficient net revenue to accomplish the projected capital improvements and associated debt service. The Financial Viability Worksheet, included as **Table 10-3,** demonstrates the foreseen financial strength.

Table 10-3
Financial Viability Test Worksheet

Test 1 - Do you have a budget, and are rates sufficient to cover expenses?		
Description	Budget Year 2011	Budget Year 2016
REVENUES		
Water Sales	$170,047	$299,738
Other Revenues	$0	$0
Total Revenue	$170,047	$299,738
EXPENSES		
Total O&M + G&A Expenses	$164,983	$191,261
Taxes	$0	$0
Debt Service Payments	$0	$100,000
Net CIP from Rates	$0	$0
Operating Cash Reserve/Annual Installment	$0	$0
Emergency Reserve/Annual Installment	$0	$1,500
Replacement Reserve	$0	$0
TOTAL REVENUE REQUIRED	$164,983	$292,761
Required Water Rate Revenue	$164,983	$292,761
Are Water Rate Revenues Sufficient	YES	YES
Test 2 - Is the Operating Cash Reserve = or > than 45 days of maintenance and operating costs?		
Current Operating Reserve (beginning of year)	$167,832	$157,779
Plus Budget Increase/Annual Installment	$0	$0
Surplus from Previous Year	$2,556	$31,688
Total Operating Cash Reserve	$170,388	$189,468
Required Operating Cash Reserve	$20,623	$23,908
Is Operating Cash Reserve Sufficient	YES	YES
Test 3 - Is the Emergency Reserve = or > than cost of the most vulnerable facility?		
Current Emergency Reserve (beginning of year)	$0	$6,000
Plus Budgeted Increase/Annual Installment	$0	$1,500
Total Emergency Reserve Funds	$0	$7,500
Cost of Most Vulnerable Facility - Well Pump	$7,500	$7,500
Is the Emergency Reserve Sufficient?	NO	YES
Test 4 - Household Index; is 1.5 percent of median household income = or > than cost per ERU?		
Median Household Income	$50,777	$50,777
Median Household Income X 0.015	$762	$762
Cost per ERU/Connection	$394	$635
1.5% of Median Household Income = or > Cost per ERU?	YES	YES
Customer Data		
Estimated Median Household Income	$50,777	$50,777
Number of Connections	431	472

October 19, 1984

ANACORTES-FIDALGO ISLAND
COORDINATED WATER SYSTEM PLAN

INTERLOCAL WATER UTILITY
FUTURE SERVICE AREA AGREEMENT

This document is an agreement concerning future water utility service area boundaries and design and construction standards agreed to by the undersigned public water systems within the Anacortes-Fidalgo Island Critical Water Supply Service Area, in western Skagit County, Washington.

WHEREAS, the establishment of definite future water service areas will promote efficient planning and water system improvements to the area through orderly water system expansion; and

WHEREAS, Skagit County and the undersigned public water systems have cooperated in the preparation of a coordinated water system plan for the Anacortes-Fidalgo Island area and agreed upon specific future water service areas as outlined on the accompanying map; and

WHEREAS, the coordinated design and construction standards within the Anacortes-Fidalgo Island Critical Water Supply Service Area, in western Skagit County, Washington, will help to avoid replacing water system facilities if adjacent systems are interconnected in the future; and

WHEREAS, there is a need to establish procedures for ensuring that adequate water supply is provided for new development as an integral part of the approval processes administered by Skagit County, the Swinomish Tribal Community, the City of Anacortes, and the Town of LaConner for their respective land use jurisdictions.

THEREFORE, the undersigned public water systems within the Anacortes-Fidalgo Island Critical Water Supply Service Area each agree to the following:

I. To plan for water system expansion within their respective future service areas as identified on the accompanying map.

II. To determine public water supply to new developments within those future service areas based upon the following process:

A. Design of public water systems for new developments shall be in accordance with the standards and specifications of the public water system within whose future water service areas the development is located.

B. Within its service area, a public water system shall have first option to serve water to proposed development; PROVIDED

THAT the existing public water system can serve water in a timely and reasonable manner consistent with State Board of Health Requirements.

C. If, based on its water system plan and/or current feasibility, the existing public water system cannot serve water to the proposed development, a new public water system may be established on a temporary basis; PROVIDED THAT arrangements shall be consummated to accomplish either of the following:

1. Develop a definitive and mutually agreeable schedule whereby the existing water system shall assume management and/or connect the new development to its system.

2. Provide for the management of the new public water supply system by the existing water system with ownership of said system being retained by the system developer and successor(s).

D. If the existing public water system decides that it cannot serve proposed development within its service area, adjoining public water systems shall be given the opportunity to provide service.

E. If none of the solutions in B through D above is possible, a new public water system may be created. If a new public water system is created within the service area of an existing system or if another existing system provides service, the service area boundaries shall be formally changed to establish the area served by the new system and further PROVIDED THAT, before authorization, such new water system shall reach agreement establishing the new system's future service area and shall meet all State and local water system regulations.

III. For new developments which lie outside future service areas of existing water systems and which require a public water supply system:

A. The appropriate land use jurisdiction (i.e., Skagit County, the Swinomish Tribal Community, Anacortes, or LaConner) shall request the proponents of such new developments to contact the closest existing public water systems(s) to determine if the existing system(s) is willing to serve the development in a timely and reasonable manner consistent with State Board of Health Regulations.

B. If no existing public water system desires to serve the new development, a new public water system serving the development shall be designed; PROVIDED THAT, before authorization,

a legal agreement shall be consummated that establishes a schedule for an existing water utility to assume management and/or connect the new public water system to an existing one, or PROVIDED THAT, a new public water system may be authorized with agreement establishing the new water system's future service area boundaries.

IV. All systems with ten (10) connections or more are signatories to this agreement. In addition, any new public water system formed within the Anacortes-Fidalgo Island Critical Water Supply Service Area shall sign this agreement as shall existing systems that expand their service area.

V. All water systems within the Anacortes-Fidalgo Island Critical Water Supply Service Area shall comply with the System Standards in the Coordinated Water System Plan. These shall be in addition to the requirements of the Washington State Department of Social and Health Services and any Skagit County standards governing water systems.

VI. The Water Utility Coordinating Committee established for the preparation of the Coordinated Water System Plan is a permanent committee with responsibility for reviewing and approving new public water systems and changes to water service areas. The Committee will meet as required to discharge its responsibilities, will review the Coordinated Water System Plan at least annually, and will amend it as appropriate. As required by law, the Water Utility Coordinating Committee will revise and update the Coordinated Water System Plan at least once every five (5) years.

IN WITNESS WHEREOF, the parties through their duly authorized representatives, have executed this Agreement the day and year below written.

CITY OF ANACORTES

Name: James Rice

Title: MAYOR

Date: 10/25/84

SKAGIT COUNTY P.U.D. NO. 1

Name: Jack B. Doty

Title: Manager

Date: 11/5/84

TOWN OF LA CONNER

Name: Mary M Lane

Title: Mayor

Date: November 2, 1984

SKAGIT COUNTY

Name: Dave Rohrer

Title: Chairman, Board of County Commissioners

Date: December 18, 1984

DEL MAR COMMUNITY SERVICES

Name: Terry R. Don

Title: President - Del Mar Community

Date: Oct 25, 1984

SHELTER BAY COMMUNITY

Name: Donald H. Sundean

Title: President Board

Date: 9 Nov 84

SUNSET WEST WATER ASSOCIATION

Name: Jerry T. Sturge

Title: President

Date: 1-2-85

SWINOMISH TRIBAL COMMUNITY

Tribal signature subject to attached exceptions incorporated by reference herein as Attachment "A".

Name: Robert Joe Sr.

Title: Robert Joe, Sr., Chairman
Swinomish Indian Senate

Date: December 14, 1984

SHOREWOOD WATER COMPANY

Name: Paul S Wagner

Title: Owner

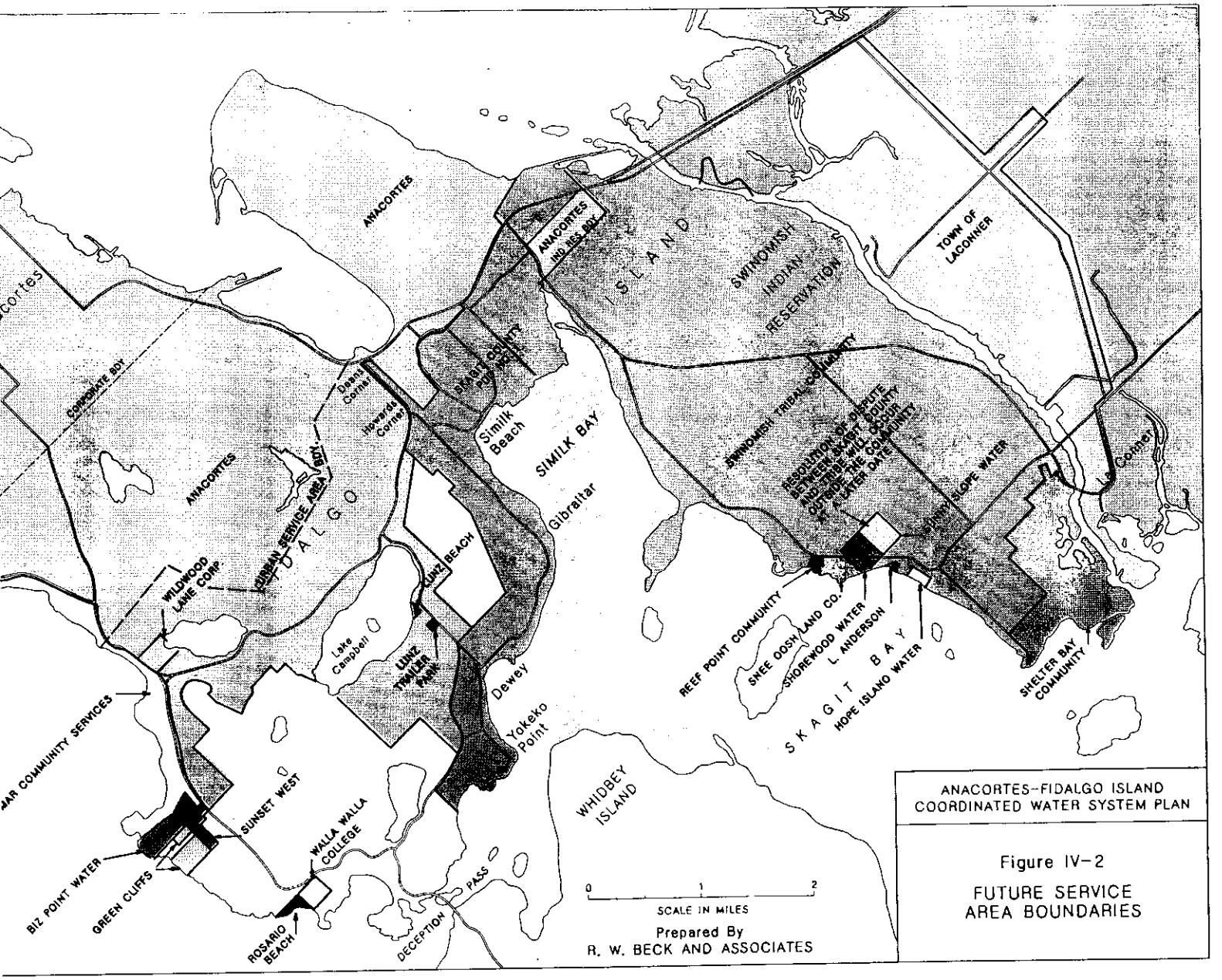
Date: Dec. 2, 84

SNEE OOSH WATER COMPANY

Name: Jay Rindal

Title: Director

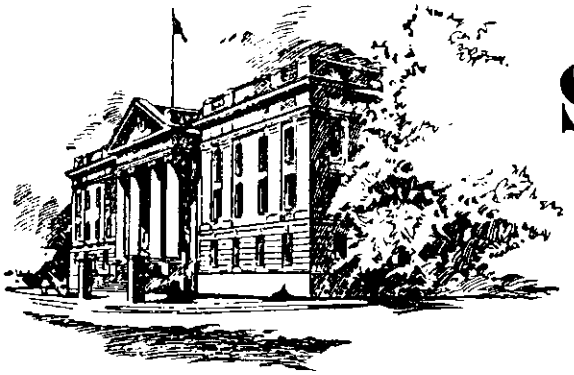
Date: Dec 3- 84



ANACORTES–FIDALGO ISLAND
COORDINATED WATER SYSTEM PLAN

Figure IV–2

FUTURE SERVICE
AREA BOUNDARIES



SKAGIT COUNTY
BOARD OF COMMISSIONERS
Skagit County Administration Building
700 S. Second, Room 202
Mount Vernon, Washington 98273
(206) 336-9300
FAX# (206) 336-9307

May 25, 1993

Paul W. Taylor
Attorney at Law
415 Pine Street
Mount Vernon, WA 98273

Dear Mr. Taylor:

We have received and reviewed your letter of May 10, 1993, regarding the Skagit Coordinated Water System Plan and its effects on the Snee Oosh Land Company.

During the development process of the plan, the County entered into agreements with each Group A water system or expanding water system which set forth their respective service areas. We could not reach an agreement with the Swinomish Tribe on the water system, and therefore no agreement was signed. At the last meeting of the Water Utilities Coordinating Committee, it was decided that the CWSP would move forward without the benefit of a signed service area agreement for the Swinomish, and that the County would later negotiate with the Tribe for a suitable agreement.

Those negotiations have not begun as of this date; however, we would be happy to include the Snee Oosh Land Company in that arbitration when we are ready to proceed. We will be asking our Health Department's Environmental Health section to take the lead on this issue, and will instruct them to keep you informed on the commencement of any actions.

BOARD OF COUNTY COMMISSIONERS
SKAGIT COUNTY, WASHINGTON

Robert Hart, Chairman

Harvey Wolden, Commissioner

Robby Robinson, Commissioner

cc: Lorna Haycox
John Thayer

RECEIVED
MAY 2 7 1993
SKAGIT COUNTY
HEALTH DEPT.

Swinomish Indian Tribal Community
Comprehensive Water System Plan
Booster Pump Station Facilities Data

Pump Station Data

Name	Suction Pressure Zone	Discharge Pressure Zone	Year Const.	Above or Below Grade	Maximum Capacity (gpm)	Meter Size & Model	Have Standby Power	Have E.G. Set Receptacle	Have Surge Protection
Main Booster Sta.	296	323	1984	Above	350	2"	Yes	Yes	Yes
Reservation Ln.	296	328	1997	Above	80	2"	No	Yes	Yes

Pump Data

Pump Name	Pump Manufacturer	Pump Model	Pump Type	Single Pump Capacity (gpm)	Design Capacity (gpm)	Design Head (feet)	Motor Mfgr	Motor Size (HP)	Control Valve Size & Model
Main Booster	Jacuzzi		Pitless Booster	200				7.5	6"
Reservation Ln.	Gould	H 8020	Centrifugal	50				2	6"

Pump Curve Data

Pump Name	Point 1		Point 2		Point 3		Pump Serial Number	Pump Impeller Diameter
	Flow (gpm)	Head (feet)	Flow (gpm)	Head (feet)	Flow (gpm)	Head (feet)		
Main Booster	200							
Reservation Ln.	50	217					M9702059 + M9702060	

Pump Control Data

Pump Name	Control Facility	Supplied Pressure Zone	Supply To Zone Priority	Pump Operation Priority	Station Have Telemetry
Main Booster	Rugid RTU Rug-8	Intertie	Reservoir		Yes
Reservation Ln.	Pressure Switch to Rombus Controls	Intertie	Res Ln		No

Swinomish Indian Tribal Community
Comprehensive Water System Plan
Storage Facilities Data

Reservoir Data

Reservoir Name	Pressure Zone	Year Const.	Material	Capacity (gallons)	Overall Height (feet)	Diameter (feet)	Water Base Elv (feet)	Overflow Elv (feet)	Ground Elv (feet)	Seismic Restraint (Y or N)
Main	323	1984	Concrete	202,000	55	25	268.0	323.0	268	No
Pull and Be Damned	210	1993	Concrete	80,000	20	26	196.0	216.0	196	No

Storage Data

Reservoir Name	Max Water Height (feet)	Volume Per Foot (gallons)
Main	323.0	3,673
Pull and Be Damned	216.0	4,000

Level Control Data

Reservoir Name	Controlled Supply Facility	Reservoir Have Telemetry
Main	Main Booster Station	Yes
Pull and Be Damned	Westshore PRV	No

Swinomish Indian Tribal Community
Comprehensive Water System Plan
Pressure Reducing Station Data

Station Data

PRV Name	Upper Pressure Zone	Lower Pressure Zone	Year Const.	Ground Elv (feet)	Normal Pressure		Station Operation Status
					Inlet (psi)	Outlet (psi)	
Shorewood	323	184	1987	119	85	30	Active
Squi-Qui	323	188	2007	126			Active
Village	323	188	1984	139	85	30	Active
Westshore	323	210	1993	125	90	40	Active

PRV Set Point Data

PRV Name	Description	Valve Size (inches)	Valve Mfgr	Valve Model	Valve Elv (feet)	Valve Set Point (psi)	Valve Set Point (feet H.E.)
Shorewood		6	Bermad	720	119	28	184
Shorewood		2	Cla-val	90-01	119	32	193
Squi-Qui		12	Cla-val	90-01	126.0	25	184
Squi-Qui		3	Cla-val	90-01	126.0	30	195
Village		6	Bermad	720	139	21	188
Village		2	Cla-val	90-01	139	30	208
Westshore		6	Cla-val		125	37	210
Westshore		2	Cla-val		125	42	222

Swinomish Indian Tribal Community
Comprehensive Water System Plan
Well Facilities Data

Well Data

Well Name	Pressure Zone	Year Const.	Current Pumping Rate (gpm)	Max. Well Capacity (gpm)	Max Inst Water Right (gpm)	Casing Size (inches)	Well Depth (feet)	Well Screen Depth (feet)	Pump Intake Depth (feet)	Static Water Depth (feet)	Pumping Water Depth (feet)	Casing Elv (feet)
Well #2	296	1987	42.5	125	125	8	273.25	273.25	259	176.5	182.25	
Well #3	296	1989	42.5	150	150	8	260	258	251	179.73	231.25	

Well Pump Data

Pump Name	Pump Manufacturer	Pump Model	Pump Type	Design Capacity (gpm)	Design Head (feet)	Motor Mfgr	Motor Size (HP)	Control Valve Size & Model	Have Standby Power	Have E.G. Set Receptacle
Well #2	Grundfos	40S	Submersible				5	4"	No	No
Well #3			Submersible				5	4"	No	No

Well Pump Curve Data

Well Name	Point 1		Point 2		Point 3		Pump Serial Number	Pump Impeller Diameter
	Flow (gpm)	Head (feet)	Flow (gpm)	Head (feet)	Flow (gpm)	Head (feet)		
Well #2								
Well #3								

Control Data

Well Name	Control Facility	Supplied Pressure Zone	Supply To Zone Priority	Well Have Telemetry
Well #2	Manual	296		No
Well #3	Manual	296		No

DATE PRINTED: 08/18/95

Washington State Department of Health
Environmental Health

WATER FACILITIES INVENTORY (WFI)

Read Instructions on back before completing

UPDATED

DATE UPDATED: 08/14/95

SYSTEM ID NO.	2. COUNTY	GROUP	TYPE	WRIA
IH7560	SKAGIT	A	COMM	3

3. SYSTEM NAME: SWINOMISH UTILITY & ENVIR SRV AUTH

STREET ADDRESS:

P.O. BOX (IF APPLICABLE): P.O. BOX 340

CITY: LA CONNER STATE: WA ZIP CODE: 98257

4. OWNER'S NAME (LAST, FIRST): SWINOMISH INDIAN TRIBE OWNER NO.: 7144

STREET ADDRESS: P.O. BOX 979

P.O. BOX (IF APPLICABLE):

CITY: LA CONNNER STATE: WA ZIP CODE: 98257

5. SYSTEM CONTACT PERSON: JOHN PETRICH - MANAGER TITLE: MANAGER

DAY TELEPHONE: 360-466-7223 EVENING TELEPHONE: 360-466-4274

6. OWNERSHIP (CHECK ONE ONLY)

- [ ] PRIVATE: NON-PROFIT
- [ ] PRIVATE: FOR-PROFIT
- [X] LOCAL GOVERNMENT (COUNTY / CITY / PUD / WATER DISTRICT)
- [ ] STATE
- [ ] FEDERAL

7. PREDOMINANT CHARACTERISTIC (CHECK ONE ONLY)

- [X] RESIDENTIAL
- [ ] RECREATIONAL
- [ ] BUSINESS / INDUSTRIAL / AGRICULTURAL / COMMERCIAL
- [ ] LODGING / FOOD SERVICE
- [ ] SCHOOL / DAY CARE
- [ ] OTHER (CHURCHES, ETC.)

WFI COMPLETED BY: TITLE:

DAY TELEPHONE: DATE:

8. SUBMITTED FOR: [ ] NEW SYSTEM [ ] NO CHANGE [ ] REACTIVATE [ ] SYSTEM NAME CHANGE* [ ] UPDATE [ ] DELETE

*OLD SYSTEM NAME - ENTER ONLY IF CHANGING WITH **THIS** WFI

SYSTEMS SERVING ANY RESIDENTS (PEOPLE LIVING IN A DWELLING SERVED BY THE SYSTEM), COMPLETE THIS SECTION

9. NUMBER ACTIVE RESIDENTIAL **CONNECTIONS**: 260

10. NUMBER ACTIVE RESIDENTIAL **POPULATION**: 1,000

SYSTEMS SERVING ANY NON-RESIDENTS (I.E., TRAVELERS, EMPLOYEES, STUDENTS, ETC.), COMPLETE THIS SECTION

11. NUMBER NON-RESIDENTIAL CONNECTIONS:

12. ENTER **AVERAGE DAILY** NON-RESIDENTIAL POPULATION SERVED FOR EACH MONTH. MAKE ENTRY FOR EACH MONTH

JAN.	APR.	JULY	OCT.
FEB.	MAY	AUG.	NOV.
MAR.	JUNE	SEP.	DEC.

13. DOES THE SYSTEM SERVE AT LEAST 25 OF THE SAME NON-RESIDENTS FOR 4 OR MORE DAYS PER WEEK FOR AT LEAST 180 DAYS PER YEAR?

[ ] YES [X] NO

14. TOTAL NUMBER CONNECTIONS METERED: 303

15. DISTRIBUTION RESERVOIR(S) TOTAL CAPACITY: 298,000 GALLONS

16. DOH SOURCE NUMBER	17. SOURCE NAME (LIST UTILITY'S NAME FOR SOURCE. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S ID# AND NAME USING FOLLOWING FORMAT: XXXXXX / NAME EXAMPLE: 77050Y / SEATTLE)	18. SOURCE CATEGORY: WELL	WELL FIELD	SURFACE	SPRING	RANNEY / INF. GAL	INTERTIE	PURCHASE-TREATED	PURCHASE-UNTREATED	19. USE: PERMANENT	SEASONAL	EMERGENCY	20. SOURCE METERED	21. TREATMENT: NONE	CHLORINATION	FILTRATION	FLUORIDATION	OTHER	22. WELL DEPTH (FEET)	23. SOURCE CAPACITY (GPM)	24. SOURCE LOCATION: 1/4, 1/4 SEC.	SEC. NO.	TWP	RNG.	SWTR EVALUATION / VOC EVALUATION
S01	433500/LA CONNER						X				X			X						/	00	00N		
S02	BARKHAUSEN WELL A	INACTIVE 10/03/1991																							
S03	WELL #2	X								X					X				273	45	SE/SE	15	34N	02E	
S04	WELL #3	X								X					X				260	45	SE/SE	15	34N	02E	
S05	02200C/ANACORTES						X			X					X					200	/	00	00N		
S06	78155Q/SHELTER BAY						X				X			X							/	00	00N		

MINIMUM REQUIRED BACTERIOLOGICAL SAMPLING SCHEDULE

25.	26.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
		1	1	1	1	1	1	1	1	1	1	1	1

IO. APPROVED SERVICES (PER PLANS): 353 DATE OF LAST SANITARY SURVEY: 00 00 0000 BY DOH [ ] LHD [ ]

SYSTEM IN CRITICAL WATER SUPPLY SERVICE AREA? [X] YES [ ] NO GW MGMT AREA? [ ] YES [ ] NO FOR LHD USE ONLY

EFFECTIVE DATE RETRO. CHANGES | SIGNATURE OF DOH REVIEWER | DATE

WATER SYSTEM

DOH 331-011 (Rev. 2/95)

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

WATER FACILITIES INVENTORY (WFI) FORM

ONE FORM PER SYSTEM

Quarter: 0
Updated: 01/08/2002
Printed: 8/6/2010
WFI Printed For: On-Demand
Submission Reason: Non-Periodic up

RETURN TO: Northwest Regional Office, 20435 72nd Ave S STE 200, Kent, WA, 98032

1. SYSTEM ID NO.	2. SYSTEM NAME	3. COUNTY	4. GROUP	5. TYPE
04366 9	SKELTON, CLIFF WATER SYSTEM	SKAGIT	B	

6. PRIMARY CONTACT NAME & MAILING ADDRESS	7. OWNER NAME & MAILING ADDRESS	8. Owner Number 018220
CLIFF SKELTON [OWNER] 24869 BROTHERHOOD RD MOUNT VERNON, WA 98273	SKELTON, CLIFF 2302 LEGGE ROAD MOUNT VERNON, WA 98273	TITLE:
STREET ADDRESS IF DIFFERENT FROM ABOVE	STREET ADDRESS IF DIFFERENT FROM A	
ATTN ADDRESS CITY STATE ZIP	ATTN ADDRESS CITY STATE ZIP	

9. 24 HOUR PRIMARY CONTACT INFORMATION	10. OWNER CONTACT INFORMATION
Primary Contact Daytime Phone: (425) 455-5040	Owner Daytime Phone:
Primary Contact Mobile/Cell Phone:	Owner Mobile/Cell Phone:
Primary Contact Evening Phone: (xxx) xxx-xxxx	Owner Evening Phone:
Fax: | E-mail:	Owner Fax Phone: | E-mail:

WAC 246-290-420(9) requires that water systems provide 24-hour contact information for emergencies.

11. SATELLITE MANAGEMENT AGENCY - SMA (check only one)

- [x] Not applicable (Skip to #12)
- [ ] Owned and Managed — SMA NAME: _____ SMA Number:
- [ ] Managed Only
- [ ] Owned Only

12. WATER SYSTEM CHARACTERISTICS (mark all that apply)

[ ] Agricultural	[ ] Hospital/Clinic	[x] Residential
[ ] Commercial / Business	[ ] Industrial	[ ] School
[ ] Day Care	[ ] Licensed Residential Facility	[ ] Temporary Farm Worker
[ ] Food Service/Food Permit	[ ] Lodging	[ ] Other (church, fire station, etc.):
[ ] 1,000 or more person event for 2 or more days per year	[ ] Recreational / RV Park	_____

13. WATER SYSTEM OWNERSHIP (mark only one)				14. STORAGE CAPACITY (gall
[ ] Association	[ ] County	[ ] Investor	[ ] Special District	
[ ] City / Town	[ ] Federal	[x] Private	[ ] State	0

15	16	17	18										19			20	21						22	23	24			
	SOURCE NAME	INTERTIE	SOURCE CATEGORY										USE				TREATMENT						DEPTH		SOURCE LOCATION			
Source Number	LIST UTILITY'S NAME FOR SOURCE AND WELL TAG ID NUMBER. Example: WELL #1 XYZ456 IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S NAME	INTERTIE SYSTEM ID NUMBER	WELL	WELL FIELD	WELL IN A WELL FI	SPRING	SPRING FIELD	SPRING IN SPRING	SEA WATER	SURFACE WATER	RANNEY / INF. GALL	OTHER	PERMANEANT	SEASONAL	EMERGENCY	SOURCE METERED	NONE	CHLORINATION	FILTRATION	FLUORIDATION	IRRADIATION (UV)	OTHER	DEPTH TO FIRST OPEN INTERVAL IN FEET	CAPACITY (GALLONS PER MINUTE)	1/4, 1/4 SECTION	SECTION NUMBER	TOWNSHIP	RANGE
S01	InAct 06/11/2001 WELL #1		X										X			Y							232	55	SE SE	16	34N	02E

WS ID	WS Name
04366	SKELTON, CLIFF WATER SYSTEM

Total WFI Printed: 1

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

WATER FACILITIES INVENTORY (WFI) FORM

ONE FORM PER SYSTEM

Quarter: 0
Updated: 10/12/2005
Printed: 4/12/2010
WFI Printed For: On-Demand
Submission Reason: Non-Periodic up

RETURN TO: Northwest Regional Office, 20435 72nd Ave S STE 200, Kent, WA, 98032

1. SYSTEM ID NO.	2. SYSTEM NAME	3. COUNTY	4. GROUP	5. TYPE
61426 C	KWONESUM WATER SYSTEM	SKAGIT	B	ALL

6. PRIMARY CONTACT NAME & MAILING ADDRESS	7. OWNER NAME & MAILING ADDRESS	8. Owner Number 014417
SWINOMISH UTILITY AUTHORITY [OWNER] PO BOX 340 LA CONNER, WA 98257	SWINOMISH UTILITY AUTHORITY TITLE: PO BOX 340 LA CONNER, WA 98257	
STREET ADDRESS IF DIFFERENT FROM ABOVE ATTN ADDRESS CITY STATE ZIP	**STREET ADDRESS IF DIFFERENT FROM A** ATTN ADDRESS CITY STATE ZIP	

9. 24 HOUR PRIMARY CONTACT INFORMATION	10. OWNER CONTACT INFORMATION
Primary Contact Daytime Phone: (360) 466-7223	Owner Daytime Phone: (360) 466-7223
Primary Contact Mobile/Cell Phone:	Owner Mobile/Cell Phone:
Primary Contact Evening Phone: (xxx) xxx-xxxx	Owner Evening Phone: (xxx) xxx-xxxx
Fax:(360) 466-7219 | E-mail:	Owner Fax Phone: | E-mail:

WAC 246-290-420(9) requires that water systems provide 24-hour contact information for emergencies.

11. SATELLITE MANAGEMENT AGENCY - SMA (check only one)

- [x] Not applicable (Skip to #12
- [ ] Owned and Managed SMA NAME: _____ SMA Number:
- [ ] Managed Only
- [ ] Owned Only

12. WATER SYSTEM CHARACTERISTICS (mark all that apply)

[ ] Agricultural	[ ] Hospital/Clinic	[x] Residential
[ ] Commercial / Business	[ ] Industrial	[ ] School
[ ] Day Care	[ ] Licensed Residential Facility	[ ] Temporary Farm Worker
[ ] Food Service/Food Permit	[ ] Lodging	[ ] Other (church, fire station, etc.):
[ ] 1,000 or more person event for 2 or more days per year	[ ] Recreational / RV Park	_____

13. WATER SYSTEM OWNERSHIP (mark only one)				14. STORAGE CAPACITY (gal
[ ] Association	[ ] County	[ ] Investor	[ ] Special District	
[ ] City / Town	[ ] Federal	[x] Private	[ ] State	20,000

15	16 SOURCE NAME	17 INTERTIE	18 SOURCE CATEGORY										19 USE			20	21 TREATMENT					22 DEPTH	23	24 SOURCE LOCATION			
Source Number	LIST UTILITY'S NAME FOR SOURCE AND WELL TAG ID NUMBER. Example: WELL #1 XYZ456 IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S NAME Example: SEATTLE	INTERTIE SYSTEM ID NUMBER	WELL	WELL FIELD	WELL IN A WELL FIELD	SPRING	SPRING FIELD	SPRING IN SPRINGFIE	SEA WATER	SURFACE WATER	RANNEY/INF. GALLER	OTHER	PERMANEANT	SEASONAL	EMERGENCY	SOURCE METERED	NONE	CHLORINATION	FILTRATION	FLUORIDATION	IRRADIATION (UV)	OTHER	DEPTH TO FIRST OPEN INTERVAL IN FEET	CAPACITY (GALLONS PER MINUTE)	1/4, 1/4 SECTION	SECTION NUMBER	TOWNSHIP	RANGE
S01	nAct 10/03/2005 WELL #1		X										X					X				X	73	52	SW SW	24	34N	02E

WS ID	WS Name
61426	KWONESUM WATER SYSTEM

Total WFI Printed: 1

WATER SUPPLY AGREEMENT

This agreement entered into this 1st day of January, 2006 between the "City" of Anacortes, hereinafter referred to as the City, and the Swinomish Utility Authority (a government agency) is for the purpose of the City supplying water to the Swinomish Indian Utility Authority, an administrative agency formed under Article VI of the Constitution of the Swinomish Indian Tribal Community, a federally recognized Indian Tribe organized pursuant to Section 16 of the Indian Reorganization Act of 1934 (25 U.S.C. § 476), hereinafter referred to as the "Customer". It replaces and supersedes any previous agreements or understandings between the parties.

The Customer is entering into this agreement to secure a supply of water for its industrial and/or municipal water supply requirements. The City owns and operates a Water Supply System, has water available to serve the Customers, and is willing to supply water according to the terms and conditions of this agreement.

The City's Water Supply System is defined for purposes of this agreement to include: 1) the water intake and treatment facilities near Avon on the Skagit River; and 2) the City's water transmission pipelines from the water treatment facilities to Sharpe's Corner.

In accordance with this agreement, the City agrees to supply the Customer water in accordance with the following terms and conditions:

1. Quantity

   The City agrees to supply quantities and pressures of water at location(s) and in amounts as stated in this agreement (Exhibits A & B), and any subsequent amendments to this agreement (Exhibit C).

2. Delivery Points

   2.1 Approved Delivery Points The City shall deliver water to the Customer at the approved delivery points listed in Exhibit A.

   2.2 New Delivery Points The Customer may request service at additional delivery points subject to the approval of the City. The City may approve new service connections consistent with the concept that the Water Supply System is not a distribution system but the Customer has responsibility for constructing and maintaining a distribution system adequate for its service area.

   The Customer shall be responsible for paying all costs associated with installing new service connections. The connection shall include the necessary piping and valves, metering equipment of standard manufacture, and suitable isolating or backflow prevention devices as appropriate. If required by the City, the meter shall be of a type capable of transmitting continuous readings to the City's Water Treatment Plant. The Customer shall prepare the design for the proposed service

connection, submit it to, and receive the approval of the City prior to its installation. The City shall own the meter and be responsible for maintaining it in good repair.

3 Quality of Water

The City shall operate and maintain its Water Supply System in order to supply water for municipal and industrial purposes that meets the water quality standards of the Washington State Department of Health and the U.S. Environmental Protection Agency, including periodic revisions to these standards. The City shall employ the normal care and practices of water utilities with respect to meeting water quality standards.

The City shall not be liable to the Customer for failure to meet the water quality standards for reasons that are outside the control of the City. The Customer shall hold the City harmless from any water quality related claim for damages by third parties served by the Customer, to the extent that the claim arises out of Customer's negligence.

4 Rates and Charges

The City has established the following rates and charges and billing procedures for customers of its Water Supply System, which apply to this agreement.

4.1 Rate Structure The City has defined the following costs associated with the facilities, operation and maintenance of its water supply system:

Capital Cost Those costs incurred for the betterment and rehabilitation of the Water Supply System. Includes amounts paid from revenues, water system funds, and debt service on bonds issued for the betterment or rehabilitation of the system.

Fixed Operating Cost The cost of labor, supervision, supplies, utilities, services, taxes, insurance, and all other expenses required to operate and maintain the Water Supply System other than those items included under Variable Operating Cost.

Variable Operating Cost The cost of chemicals and electric power required to deliver water from the Water Supply System.

4.2 Cost Allocation The Customer shall pay its proportionate share of the Capital Cost, Fixed Operating Cost, and Variable Operating Cost. These costs shall be allocated as follows:

Capital Cost Allocated to all Water Supply System customers based on the Committed Volume of water to each customer in proportion to the total water supply requirements.

Fixed Operating Cost Allocated to all Water Supply System customers based on the metered water volume of each customer as a percentage of the total metered volume of all customers, with the following exceptions:

1) Administrative support services and all employee benefits shall be allocated to customers in the same proportions that the total cost of all other Personnel Services is divided among them.
2) The State Excise Tax shall be allocated based on actual (or projected) billings to each of the customers. In accordance with Washington State Law, no Excise Tax will be assessed to wholesale customers purchasing water for resale.

Variable Operating Cost Allocated to all Water Supply System customers in accordance with the metered water volume of each customer as a percentage of the total metered volume of all customers.

4.3 Billing Basis

1) The Capital Cost Allocation to customers is determined each time a water rate analysis is prepared by the City and is set for the ensuing rate period (usually 3 to 5 years). Each customer's "committed" volume used to calculate the Capital Cost for the rate period shall be agreed upon between the City and the Customer based upon current usage and estimated increased water requirements during the rate period. The current Capital Cost is shown in Exhibit B.
2) The Fixed and Variable Operating Costs shall be determined each year as part of the City's budgeting process. Rates current as of the date of this agreement are shown on Exhibit B and are used as the basis for the customer billings according to the volume of water used. The City will calculate the unit Fixed and Variable Operating Costs for the period based upon projected operating costs and projected water use and will notify the customers of these rates (Exhibit C). These revised costs will be used as the basis for billing customers over the billing period. Periodically, but not to exceed two years, the City will calculate and report actual costs and retroactively adjust each customer's charges (i.e., increase or decrease) to actual costs.

4.4 Billing The City shall read the Customer meters each month, calculate, and issue a bill to the Customer. The bill shall identify the Capital Cost, the Fixed Operating Cost, the volume of metered water delivered to the Customer during the month, and the corresponding Variable Operating Cost. The Capital Cost and Fixed Operating Cost are payable regardless of the volume of water consumed while the Variable Operating Costs shall be paid according to the volume of

metered water delivered to the Customer. Payment by the Customer is due within 15 days of the receipt of the bill.

4.5 Late Payment If a bill remains unpaid after 30 days, the City will assess interest on the delinquent amount at the rate of 12% per annum. If a bill still is not paid after 90 days, the City may use other remedies legally available to is, including shutting off service to enforce payment.

4.6 Additional Charge During the rate period, the Customer is entitled to the quantity of water fixed as the basis for the capital charge (Committed Volume). Should the Customer use an annual volume greater than the Committed Volume shown on Exhibit B or as amended on Exhibit C, it shall pay the current Commercial rate (Outside of City water sales) for the quantity in excess of the Committed Volume.

5. Metering

The volume of water delivered to the Customer shall be measured by metering equipment installed in accordance with Article 2. The meter shall be maintained and read by the City. It shall be tested by the City periodically, but not less than once per year, to assure its continuing accuracy and conformance to the standards of measurement and service accepted in the water industry. The Customer has the right to be notified ahead of time and be present at any of the regularly scheduled tests. The cost of conducting such tests shall be borne by the City. These tests may also be conducted at other times at the request of the Customer and the Customer may elect to have a representative witness the meter test. If the meter is accurate, the Customer shall pay for the cost of the test; but if the test reveals an inaccuracy of more than 2 percent, the City shall pay for the test. If an inaccuracy of more than 2 percent is discovered, all billings for water furnished hereunder for one-half the time from the date of the preceding test shall be adjusted. The adjustment shall be for the full amount in excess of 2 percent.

6. Continuity of Service

The City shall use reasonable diligence to provide a regular and uninterrupted supply to the Customer's approved delivery point(s), but shall not be liable to the Customer for damages, breach of contract, or otherwise for interruption of service or curtailment of supply for any cause beyond the control of the City. These could include, but are not limited to, Acts of God, sabotage, war, fires, floods, earthquakes, power failure or other catastrophes, strikes, or failure or breakdown of the Water Supply System. The Customer shall hold the City harmless from any claim for damages related to continuity of service by third parties served by the Customer, to the extent that the claim arises out of Customer's negligence.

7. Conflicts

To the extent that there is any inconsistency between the provisions of this agreement, any exhibit incorporated as part of this agreement, or subsequent amendments and other rules and regulations of the City, the provisions of this agreement shall control.

8. Future Supply

8.1 Service Area This agreement between the City and the Customer is to supply water to the Customer's existing industrial operations and/or water service area. In this regard, the Customer agrees not to increase its industrial operations, to add new customers, or to expand its service area in a manner that would increase its water requirements by more than 10 percent without the prior approval of the City.

8.2 Water Supply Requirements The City operates its Water Supply System for the purpose of delivering an adequate supply of good quality water to all of its customers. The City agrees to maintain and to operate its system so as to meet the volumes contracted for by its customers and to supply additional volumes as may be required by the Customer in the future, consistent with the needs of all its customers.

8.3 Future Improvements The City will plan and develop water supply facilities that may become necessary in the future to replace existing facilities or to expand the capacity of its Water Supply System to meet growing demands. The City may require appropriate commitments from its customers prior to proceeding with system improvements.

9. Termination

Either the City or the Customer shall have the right to terminate this agreement by giving at least one year written notice of its desire to do so.

10. Term

Subject to the provisions of paragraph 9 of this Agreement, this agreement shall take effect on January 1, ~~2005~~ 2006, and remain in full force and effect until December 31, 2025. Either party can request amendment or renegotiation of this agreement not more frequently than on an annual basis.

11. Records Inspection

The City shall maintain and make available for inspection at reasonable times all records pertaining to the water system. These records shall be maintained for a minimum 3-year period.

12. Addresses

All notices and billing required hereunder shall be sent to the following addresses:

CITY OF ANACORTES
Mailing: PO Box 547
Anacortes, WA 98221
Physical: 904 6th Street
Anacortes, WA 98221

CUSTOMER
Notices and Billings:
Swinomish Utility Authority
P.O. Box 340
La Conner, WA 98257

13. Applicable Law

This Agreement and all disputes arising thereunder shall be governed by Washington State Law.

IN WITNESS WHEREOF, the parties hereto have executed this Contract as of the day and year first above written.

CITY OF ANACORTES

By: H. Dean Maxwell
H. Dean Maxwell, Mayor

ATTEST:

Wanda Johnson
Wanda Johnson, City Clerk

SWINOMISH UTILITY AUTHORITY

By: John Petrich
John Petrich, Utility Manager

ATTEST:

Michael E. Porter
~~Rosemary S. Cayou, Bookkeeper~~
Michael E. Porter, Admn. Asst.

EXHIBIT A

Dated: January 1, 2006

Water Supply Agreement between the City of Anacortes and Swinomish Utility Authority.

Approved Metered Service Connections:

No.	Size	Brand	Type	Location	Reading System
1	6"	Rockwell	Compound	Intersection of Reservation Rd/Stevenson Rd	Automated
2	8"		6" Fireline	12885 Casino Dr	Manual
3	2"			12885 Casino Dr	Manual
4	5/8 X 3/4"			12885 Casino Rd	Automated
5	5/8 X 3/4"			10041 S March Pt Rd	Automated

EXHIBIT B

Dated: January 1, 2006

Water Supply Agreement between the City of Anacortes and Swinomish Utility Authority.

1. Water Charges:

Capital Cost	$1,100 / Month
Fixed Operating Cost (2005 Estimate)	$1,030 / Month
Variable Operating Cost (2005 Estimate)	$135.75 / Million Gallons

2. Committed Water Volume:

   Annual: 42.0 Million Gallons

3. Water Pressure: 120 psi

EXHIBIT B

This Exhibit B, effective February 1, 2011, replaces and supersedes Exhibit C Amendment No. 1 to the Water Supply Agreement entered into July 1, 2008 between the City of Anacortes and the Swinomish Utility Authority (the "Agreement"). Under the Agreement, the parties have agreed to the amount of the committed volume of water for the below-stated period. And, the applicable rates and charges based on that committed volume follow.

1. **Water Charges for the period of 2/1/2011 to 12/31/2013:**

Capital Cost	**$ 2102 /month**
Fixed Operating Cost (estimate)	**$ 670 /month**
Variable Operating Cost (estimate)	**$152.42 /million gallons**

2. **Committed Water Volume for the period 2/1/2011 to 12/31/2013:**
   Annual: 42.0 million gallons/year

3. **Water Pressure:**
   120 PSI

The charges for the year 2013 will increase beyond that shown here, based on the final Water Treatment Plant Project cost.

All other terms and conditions of the original Agreement shall remain in effect.

ACKNOWLEDGED AND ACCEPTED FOR THE ABOVE-STATED PERIOD.

SWINOMISH UTILITY AUTHORITY

John Petrich
Utility Manager

Dated: 2/15/11

ATTEST:

Rosemary S. Cayou
Bookkeeper

CITY OF ANACORTES

H. Dean Maxwell
Mayor

Dated: 3/1/11

ATTEST:

Steve Hoglund
City Clerk/Treasurer

cc Martin
cc Leif
cc Nilson
cc Lewis
Norman

MEMORANDUM OF AGREEMENT
Between
THE INDIAN HEALTH SERVICE
And
THE SWINOMISH TRIBE
And
THE TOWN OF LaCONNER
And
THE SHELTER BAY COMPANY

This agreement is made between the Indian Health Service, acting through the Director, Portland Area Indian Health Service, Department of Health, Education, and Welfare, under and pursuant to the provisions of Public Law 86-121 (73 Stat. 267); the Swinomish Tribe, Swinomish Indian Reservation, Washington, hereinafter called the Tribe, acting through the Swinomish Tribal Senate; the Town of LaConner, Washington, acting through the Mayor; and the Shelter Bay Company, Washington, acting through the President of the Company.

WHEREAS, the Tribe is desirous of obtaining satisfactory and adequate water supply facilities for the Indians of the Swinomish Indian Reservation; and

WHEREAS, the Tribe, acting through the Chairman, by project proposal submitted to the Indian Health Service on January 6, 1972, requested installation and/or improvements to the community water system for the Indians on the Swinomish Reservation; and

WHEREAS, the Indian Health Service is desirous of assisting in the construction, installation and/or rehabilitation of the community water system for the Indians of the Swinomish Tribe,

NOW THEREFORE, in order to carry out the project as set forth in the attached Third Amendment to the Project Summary dated May 1974, the parties mutually agree:

Indian Contributions

1. That the Tribe will provide, without cost to the Indian Health Service, the unskilled labor to give affected premises a thorough general cleanup before and upon completion of construction.

2. That the Tribe will provide one or more representatives to coordinate the conduct of tribal participation under this agreement, including: active promotion of attendance of Indian beneficiaries at meetings, and obtaining cooperation of tribal members in the fulfillment of labor responsibilities assumed by the Tribe under this agreement.

3. That all of the foregoing work will be performed under and in accordance with the technical direction of the Indian Health Service Project Engineer.

4. That the Tribe hereby grants permission for the Indian Health Service and its representatives to enter upon or cross tribal lands on the Swinomish Indian Reservation for the purposes of carrying out the project outlined in the attached Project Summary and further agrees to waive all claims which may arise by reason of entry upon such lands.

5. That the Tribe hereby grants to the Town a twenty foot temporary construction easement and a ten foot maintenance easement over, across, and under that portion of the Swinomish Reservation needed for the water main extension to Shelter Bay. The easement shall be for the purpose of constructing, maintaining, repairing, replacing and servicing the water system.

6. That the Tribe hereby grants to the Town a ten foot maintenance easement over, across, and under the existing sewer and water mains and service lines up to and including the water meters, as provided for in provision number four of the Utility Agreement dated August 7, 1972. This easement shall be

for the sole purpose of maintaining, repairing, replacing and servicing the water and sewer system.

Shelter Bay Company Agreement

7. The Shelter Bay Company agrees to permit the Swinomish tribal water distribution system to be interconnected with the Shelter Bay water system, including connection and meter installations, solely for the purpose of an emergency alternate source of supply. The cost of this interconnection shall be incurred solely by the Indian Health Service.

8. The Shelter Bay Company further agrees to cause to be granted to the Indian Health Service a construction easement, and a maintenance easement to the town over, under, and across that portion of the Shelter Bay development necessary for the construction of a water main and a water meter.

Town of LaConner Agreement

9. The Town agrees to furnish water to the Swinomish Indians in accordance with the Utility Agreement dated August 7, 1972. The Town also agrees to authorize an 8" connection to the existing 14" water main, extension of an 8" water main, meter installations, and necessary appurtenances. The water lines installed shall meet the Town's regulations.

10. The Town agrees to allow the Indian Health Service to utilize, without charge, such rights of way, easements, or other interests in its lands as the Indian Health Service and the Town of LaConner may determine are reasonably necessary for the provision of facilities described in the attached Third Amendment to the Project Summary.

Indian Health Service Contributions

11. The Indian Health Service will provide, without charge to the Indians, all materials, supplies, equipment, and labor for the construction of said water supply facilities as provided for in the attached Third Amendment to the Project Summary, and not otherwise provided for in this agreement.

Transfer of Facilities

12. Upon completion of the project, the Indian Health Service will transfer to the Tribe all rights, title and interest of the Indian Health Service in the community facilities constructed and improved on the Reservation and in LaConner from the Channel to and including the water meter-pressure reducing installation.

13. The Tribe hereby agrees to accept the transfer of such community facilities as the property of the Tribe, and shall subsequently turn over the maintenance of said facilities to the Town of LaConner.

14. The Indian Health Service hereby agrees to transfer to the Town the water main and appurtenances installed in LaConner up to but not including the water meter-pressure reducing installation.

15. That the Town agrees to accept the ownership and maintenance of all new water mains in LaConner upon completion of construction and inspection by the Town of LaConner to assume that all construction meets Town ordinances and regulations.

Project Schedule

16. That in the interest of coordination, understanding and economy, before construction of the project begins, a detailed work plan for the scheduling and conduct of the project will be prepared by the Indian Health Service Project Engineer in consultation with Tribal, Shelter Bay, and Town of LaConner representatives. The work plan will specify the facilities to be

installed, and a time schedule for completing each item of work. The work plan may be modified or amended by the Project Engineer when necessary to facilitate accomplishment of the project.

IN WITNESS WHEREOF, the parties hereto have subscribed their names.

FOR THE SWINOMISH TRIBAL SENATE

Sept 19, 74
Date

Chairman, Swinomish Tribal Senate, having been duly authorized to enter into this agreement on behalf of the Swinomish Tribe of the Swinomish Indian Reservation as evidenced by the attached certified copy of the resolution made by the Swinomish Tribal Senate

FOR THE SHELTER BAY COMPANY

SEPT. 16, 1974
Date

Vice-President, Shelter Bay Company, having been duly authorized to enter into this agreement on behalf of the Shelter Bay Company

FOR THE TOWN OF LaCONNER

8-30-74
Date

Mayor, Town of LaConner, having been duly authorized to enter into this agreement on behalf of the Town of LaConner

FOR THE INDIAN HEALTH SERVICE

9-23-74
Date

acting Director, Portland Area Indian Health Service, for the Indian Health Service, Department of Health, Education, and Welfare

MEMORANDUM OF AGREEMENT
REGARDING UTILIZATION OF SKAGIT RIVER BASIN WATER
RESOURCES FOR INSTREAM AND OUT OF STREAM PURPOSES

I. PURPOSE OF AGREEMENT

A. To ensure the establishment of instream flows to protect fisheries resources, and the mitigation of any interference with such established flows;

B. To provide a mechanism for the coordinated management of water resources in areas described by the Skagit County Coordinated Water System Plan, Regional Supplement, July 1993 ("CWSP") to meet the out-of-stream needs of the Swinomish Indian Tribal Community, Upper Skagit River Tribe, and Sauk-Suiattle Indian Tribe (collectively "the Tribes"), local governments, and public water purveyors within Skagit County;

C. To avoid litigation or adjudication of water resources within the Skagit River Basin between the Parties to this Agreement;

D. To assist in expediting the Department of Ecology's water right decision-making within the CWSP service area;

E. To modify the CWSP to conform to this Agreement and to incorporate this Agreement into the City of Anacortes' and Public Utility District No. 1 of Skagit County's Joint Operating Agreement.

II. PARTIES TO THIS AGREEMENT ("THE PARTIES")

City of Anacortes ("the City")
Public Utility District No. 1 of Skagit County ("PUD")
Skagit County ("the County")
Upper Skagit Indian Tribe
Swinomish Indian Tribal Community
Sauk-Suiattle Indian Tribe
(collectively "the Tribes")
Washington State
Department of Ecology ("Ecology")
Department of Fish and Wildlife ("WDFW")

III. DEFINITIONS

A. Instream Flow - The quantity of flow necessary to maintain sufficient water in a stream to support in harvestable numbers the natural production of food and game fish.

B. Established or establishing instream flows - Instream flows that are established by rule and thus enforceable by law.

C. Out-of-Stream Use - The quantity of water identified for withdrawal from the Skagit River and its tributaries, or from groundwater in continuity with the Skagit River or its tributaries, for use by the City, PUD, and Tribes.

D. Effective Date and Term of Agreement - The Effective Date of this Agreement shall be when the last Party has signed the Agreement and shall continue for 50 years from the effective date.

E. Claims or Adjustments - Existing, recorded, pending, and proposed new water right documents consisting of registered claims, certificates, permits, applications, and proposed changes to such documents related to place of use, point of diversion, and/or authorized instantaneous and annual quantities of water, all of which are specifically identified in Sections IV.B.1.a, IV.B.1.b (1), and IV.C.1.a-d of this MOA.

F. Skagit River Basin - The water resource basin as generally defined by the State of Washington Water Resource Inventory Areas 3 and 4.

G. CWSP - Skagit County Coordinated Water System Plan, Regional Supplement (July 1993).

H. Lower Skagit River Instream Flows - Established instream flows for the segment of the Skagit River below the Skagit River PUD Pipeline Crossing east of Sedro Woolley ("PUD Pipeline Crossing") measured at the existing USGS Station 12200500, near Mt. Vernon.

I. Future claims or adjustments - any claims or adjustments not specifically identified in this MOA.

J. Cultus Mountain Streams Instream Flows - Established instream flows for the Salmon, Turner, Mundt, and Gilligan Creeks located in the general Cultus Mountain area.

K. Ecology Low-Flow Streams: Those streams on Ecology's Surface Water Source Limited (SWSL) list that have been identified to have limitations in available supply as a result of fisheries concerns.

IV. AGREEMENTS

A. The Tribes agree to the following, conditioned upon the other Parties meeting their obligations as outlined in this Agreement, which includes establishing Lower Skagit River Instream Flows as defined in this Agreement, and as jointly or individually recommended by the parties, within the time period established in subsections IV.B.2.c. and IV.C.2.c., unless such time period is extended in the manner described in such sections.

1. To not challenge any Skagit River Basin water rights claims or adjustments, made by the City or PUD within 50 years from the effective date of this Agreement, as

long as such claims or adjustments are consistent with this Agreement. An inconsistent claim or adjustment would include, but not be limited to, claims or adjustments other than specifically identified in this Agreement as not subject to Lower Skagit River Instream Flows that in any way interfere with established instream flows.

2. That established Lower Skagit River Instream Flows will constitute the full instream flow agreed to by the Parties for 50 years from the effective date of this Agreement;

3. That any challenges made by the Tribes after the 50-year period of this Agreement will be made only against future claims or adjustments by the City or PUD that are additional to those identified in Sections IV.B.1.a, IV.B.1.b(1), and IV.C.1.a, b, c, and d of this Agreement;

4. To collaborate with the Parties to secure adequate flows for instream and out-of-stream uses for areas identified in the CWSP;

5. To work towards establishing satellite systems as defined in the CWSP with the objectives of reducing groundwater or surface water withdrawals that adversely impact Skagit River Basin Instream Flows, improving water use efficiency, and providing public water delivery to existing and planned communities in Skagit County. A primary objective is to reduce the use of exempt wells in those areas of the County experiencing inadequate instream flows that may be occurring as a result of groundwater withdrawal;

6. To seek funding sources to: contribute towards the development and implementation of long-term watershed management programs; develop a coordinated water delivery system throughout the CWSP service area; and achieve the objectives of this Agreement.

B. The City of Anacortes agrees to the following:

1. The following certificates presently held, pending water right applications, and future claims or adjustments to water rights will be recognized and put to use by the City in accordance with the relative order of priorities set forth below.

a. City Water Rights Not Subject to Lower Skagit River Instream Flows: 85 cubic feet per second (cfs) (54.94 mgd) as comprised in the following:

(1) Certificate #C-709 (2/14/1963) which provides 70 cfs (45.24 million gallons per day or mgd) for the "area served by the City of Anacortes Water Supply System".

(2) Certificate #C-1161 (7/2/1930) which provides 15 cfs (9.70 mgd) for the "City of Anacortes." This Agreement provides for a change in the point of diversion under this right downstream approximately 1,500 feet to coincide with the existing intake for Certificate #C-709.

b. City water rights subject to Lower Skagit River Instream Flows developed as a condition of this Agreement:

(1) Certificate #C-3959 (9/13/1954) which provides 32.30 cfs (20.88 mgd). This Agreement provides for a change in the point of diversion of Certificate #C-3959 from the original "Ranney Well" Skagit River bed subsurface diversion to coincide with the existing intake for Certificate #C-709.

(2) The following may be subject to results of state-of-the-art instream flow studies, regardless of the date of the application: 1) future rights acquired by the City in excess of those specified in Section IV.B.1.b(1) above for service to parties within or outside the service areas as defined in the CWSP; and 2) future claims or adjustments.

2. The City will participate in identifying instream flow needs through an IFIM instream flow study process. The City and PUD, with consultation from the Tribes, will fund and contract for the IFIM studies, which will apply only to the segment of the Skagit River described in subsection III.H.

a. The City, PUD, and any other parties that desire to assist with financing, will fund and contract for the necessary studies to establish Lower Skagit River Instream Flows. The Tribes and WDFW will provide the fisheries and fisheries habitat management criteria for input into the IFIM study and recommended Skagit River Instream Flows.

b. The Parties to this Agreement will jointly develop the recommended instream flows using the Water Resources Forum process (Instream Flow Policy Working Draft, 8th Draft, Revised May 19, 1993) as a guide. The Tribal IFIM study input criteria will be limited to fisheries and fisheries habitat management and will not include other instream objectives. The Parties will utilize all appropriate methods to establish an agreed upon instream flow for managing the Skagit River below the PUD Pipeline Crossing, including mediation.

c. Schedule.

(1) The City agrees that the following events must occur within two years of the effective date of this Agreement: 1) the necessary Lower Skagit River instream flow studies are completed; 2) the City, PUD, and Tribes agree on the recommended instream flows; and 3) the City, PUD, and Tribes submit jointly recommended instream flows to Ecology, or, if these parties cannot agree in writing, submit the differing recommendations for Lower Skagit River Instream Flows to Ecology for its decision as to what to include in the rule proposal. This two-year schedule may only be extended by written agreement of the City, PUD, and Tribes. If these parties cannot agree to an extension, the City shall take all necessary actions to ensure that changes to existing water rights documents identified in section IV.B.1. shall not remain or

become effective as further described in subsection (3) below. The City may then remove any commitment of water service to the Tribal Reservations identified in subsection IV.B.(3) except as required under a separate contract.

(2) Upon receipt of either the joint or differing recommendations described in subsections IV.B.2.c. and IV.C.2.c., Ecology shall immediately file a Preproposal Statement of Inquiry Code Revision (CR) 101, indicating its intention to adopt the Cultus Mountain Instream Flows and Lower Skagit River Instream Flows. Ecology shall seek to complete formal rulemaking by filing a CR 102 within eighteen (18) months of its receipt of the joint recommendation or deferment described in IV.B.2.c(1) and IV.C.2.c(1), with a goal of adopting final rules within two years of its receipt.

(3) If Lower Skagit River Instream Flows have not been established by the end of two years following Ecology's receipt of the recommendations described in subsection (1), the City, PUD, and Tribes may extend the deadline only by written agreement. If the City, PUD, and Tribes cannot agree to an extension, the City shall immediately request Ecology to rescind any water right change action submitted to Ecology since the Agreement became effective, even if Ecology has taken final action. The City may immediately reapply for the change. The intent of this provision is to secure the Tribes' right to challenge these changes in the event that Lower Skagit River Instream Flows are not established within the specified schedule.

d. In the event that Ecology approves the changes referred to in subsection IV.B.2.c(3) above, the City shall ensure that any water rights documents issued by Ecology that purport to effectuate these changes shall be expressly and clearly conditioned to require compliance with this Agreement. Regardless of whether or not Ecology so conditions the document(s), the City shall, by its own authority, enforce the conditions of this Agreement when using these water rights.

e. The City may, at its option, negotiate with upstream Skagit River dam operators for release of flows to maintain the agreed upon flow levels downstream from the PUD Pipeline Crossing.

3. To guarantee in perpetuity to the Swinomish Indian Tribal Community for non-discriminatory use by all residents within the Swinomish Indian Reservation a water quantity of 2.8 million gallons per day based on demands identified annually and projected for five and twenty years by the Swinomish Indian Tribal Community and based on amendment to the existing wholesale contract with the Swinomish Tribe. Government-owned and operated uses will be subject to conservation and curtailment programs for both the Reservation and off-Reservation water uses as outlined in Exhibit A, which is incorporated herein. Government-owned and operated economic development on the Reservation, such as the Tribe's marina, gaming facilities, hotels, and similar facilities will be

considered services that generate governmental revenue and will receive the second highest priority after residential domestic use. Similar government-owned and operated commercial services within the City's and PUD's service area will receive the same status.

4. The City, including its Public Works Department, agrees not to provide any water service to users or property located within the Swinomish Indian Reservation without the prior written approval of the Swinomish Indian Tribal Community.

5. To assist Ecology in adopting Lower Skagit River Instream Flow rules within the time period set forth in subsection IV.B.2.c..

6. To actively support and provide input at both a policy and technical level to County officials regarding implementation of Section 63 of the Growth Management Act, such that building permits will only be issued if there is an adequate supply of potable water that can be withdrawn from groundwater without adversely impacting instream flows, other than as agreed herein.

7. To actively seek amendment of the CWSP and adoption of County ordinances that: a) require, in lieu of individual wells, connection of new individual/single family homes to public water systems where the proposed development is within the designated service area of existing utilities and timely and reasonable service is available; and b) limits the use of the 5,000 gallons per day exemption in those areas of the County experiencing inadequate Skagit River Basin Instream Flows that may be occurring as a result of groundwater withdrawals.

8. To seek funding sources to contribute: towards the development and implementation of long-term watershed management programs; towards the development of a coordinated water delivery system throughout the CWSP service area; and towards achieving the objectives of this Agreement. This provision does not supersede or in any way affect the City's financial commitment as set forth in Section IV. B.2.

C. The PUD agrees to the following:

1. The following certificates presently held, pending and new water right applications, and future claims or adjustments to water rights will be recognized and put to use by the PUD in accordance with the relative order of priorities set forth below.

a. PUD water rights subject to established Cultus Mountain Instream Flows, but not subject to established Lower Skagit River Instream Flows.

Document No.	Priority Date	Source	Maximum Appropriation cfs	mgd
Claim 9332	Pre-1917	Salmon Creek	1.80	1.16
Certificate 411	10/10/1929	Gilligan Creek	1.50	0.97
Certificate 724	10/30/1963	Gilligan Creek	7.39	4.77
Claim 9333	Pre-1917	Turner Creek	4.30	2.78
Certificate 739	10/30/1963	Turner Creek	6.20	4.01
Certificate 26	9/28/1917	Mundt Creek	2.50	1.62
Certificate 737	10/30/1963	Mundt Creek	8.00	5.17
Certificate 8738	1/16/94	Judy Reservoir	Storage	Storage
Certificate R-673	4/24/1963	Judy Reservoir	Storage	Storage
		Subtotal	31.69	20.48

b. PUD water rights not subject to established Lower Skagit River Instream Flows.

Document No.	Priority Date	Source	Maximum Appropriation cfs	mgd
Certificate 1904	3/26/1953	Sedro Woolley Well	2.00	1.29
Certificate 2107	5/12/1954	Ranney Well	8.90	5.75
Cultus Mountain Water Rights (See Section IV.C. 1 (a))			31.69	20.48
			42.59	27.52

c. Pending and new PUD Cultus Mountain water right applications subject to Cultus Mountain and Lower Skagit River Instream Flows.

The purpose of these pending and new applications is to make full use of the hydraulic capacity of existing collector lines. When the rights listed below are combined with rights Cultus Mountain streams listed in subsections a and b above, the total diversion will not exceed 35.8 mgd.

Document No.	Priority Date	Source	Maximum Appropriation cfs	mgd
18219 (pending)		Salmon Creek	4.00	2.59
25129 (pending)		Gilligan Creek	13.15	8.50
New		Turner Creek	6.60	4.27
New		Mundt Creek	16.06	10.38

d. New application partially not subject to Skagit River Instream Flows for proposed Skagit River pumping plant delivering water to Judy Reservoir.

The PUD's combined capacity of the gravity collector lines that presently supply Judy Reservoir is 55.39 cfs/35.80 mgd. The PUD is dependent on the ability to withdraw water from the streams, river, or combination of river and streams in the amount of 55.39 cfs/35.80 mgd when available. A new application for a water right will be filed on the Skagit River in the amount of 12.80 cfs/8.28 mgd. This application for 12.80 cfs/8.28 mgd, when combined with the water rights listed in subsection IV.C.1.a above (31.69 cfs/20.48 mgd) with the new point of diversion on the Skagit River and the existing Sedro-Woolley Well (2.0 cfs/1.29 mgd) and Ranny Well (8.90 cfs/5.75 mgd), both of which are to be transferred to the new pumping station, will result in a total water right of 55.39 cfs/35.80 mgd. Of this amount, 42.59 cfs/27.52 mgd is not subject to Lower Skagit River Instream Flows, and the remainder is subject to such flows.

e. The instream flows being developed on the Cultus Mountain streams through the completion of an IFIM Study will be recognized as a higher priority than the Cultus Mountain stream: 1) certificates and claims listed in Section IV.C.1.a; 2) pending and new water rights applications listed in Section IV.C.1.c.; and 3) future claims and adjustments.

f. Based on this Agreement, the PUD:

(1) will manage the Cultus Mountain supply to meet the jointly agreed upon Cultus Mountain Instream Flows;

(2) may periodically divert up to 35.80 mgd from the Cultus Mountain streams into Judy Reservoir subject to the Cultus Mountain Instream Flows;

(3) may provide for an additional point of diversion at the PUD Skagit River Pumping Station on each of the water rights listed in subsection IV.C.1.a above;

(4) may transfer the Ranney Well and Sedro Woolley well water right points of diversion to the new PUD Skagit River pumping station; and

(5) may periodically divert a maximum of 35.80 mgd from the Skagit River into Judy Reservoir as an alternate source of supply to the Cultus Mountain system as explained above, with 27.52 mgd of this amount not subject to Skagit River Instream Flows and 8.28 mgd subject to Skagit River Instream Flows; and/or.

(6) The PUD will continue investigations regarding instream flow needs on Salmon, Mundt, Gilligan, and Turner Creeks. Upon completion of these investigations and establishment of instream flows, the PUD will ensure the retroactive application of the instream flows to existing and pending PUD water rights related to Cultus Mountain streams. As a condition of this subordination of water rights, the PUD may: (1) utilize the full hydraulic capacity of the existing collector lines to Judy Reservoir when

water is available in excess of instream flow needs as outlined in IV.C.1.c above, and (2) provide a substitute and augmented supply from the Skagit River to meet the reductions that occur as a result of curtailment of withdrawals from Cultus Mountain streams due to instream flow needs.

g. The Agreement provides for changes to the water right documents identified in Section IV.C.1 herein as an element of this Agreement.

h. Those future claims or adjustments acquired by the PUD for service to parties within or outside the service areas defined in the CWSP, may be subject to results of state-of-the-art instream flow studies.

2. The PUD will participate in identifying instream flow needs through an IFIM instream flow study process. The City and PUD, with consultation from the Tribes, will fund and contract for the IFIM studies, which will apply only to the segment of the Skagit River described in subsection III.H.

a. The City, PUD, and any other parties that desire to assist with financing will fund and contract for the necessary studies to establish Lower Skagit River Instream Flows. The Tribe and WDFW will provide the fisheries and fisheries habitat management criteria for input into the IFIM Study and recommended Lower Skagit River Instream Flows.

b. The Parties will jointly develop the recommended instream flows using the Water Resources Forum process (Instream Flow Policy Working Draft, 8th Draft, Revised May 19, 1993) as a guide. The Tribal IFIM study input criteria will be limited to fisheries and fisheries habitat management and will not include other instream objectives. The Parties will utilize all appropriate methods to establish an agreed upon instream flow for managing the Skagit River below the PUD Pipeline Crossing, including mediation.

c. Schedules.

(1) The PUD agrees that the following events must occur within two years of the effective date of this Agreement: 1) the necessary Skagit River instream flow studies are completed; 2) the City, PUD, and Tribes agree on the recommended instream flows; and 3) the City, PUD, and Tribes submit jointly recommended instream flows to Ecology, or, if these parties cannot agree, in writing submit differing recommendations for Lower Skagit River Instream Flows to Ecology for its decision as to what to include in the rule proposal. This two-year schedule may only be extended by written agreement of the City, PUD, and Tribes. If these parties cannot agree to an extension, the PUD shall take all necessary actions to ensure that changes to existing water rights documents identified in section IV.C.1. shall not remain or become effective as further described in subsection (3) below. The PUD may then remove any commitment of water service to

the Tribal Reservations identified in subsection IV.C.(3) except as required under a separate contract.

(2) Upon receipt of either the joint or differing recommendations described in subsections IV.B.2.c. and IV.C.2.c. Ecology shall immediately file a Preproposal Statement of Inquiry (CR 101), indicating its intent to adopt Cultus Mountain Instream Flows and Lower Skagit River Instream Flows. Ecology shall seek to complete formal rulemaking by filing a CR 102 within eighteen (18) months of its receipt of the joint recommendation or deferment described in IV.B.2.c(1) and IV.C.2.c (1), with a goal of adopting final rules within two years of its receipt.

(3) If Lower Skagit River Instream Flows have not been established by the end of two years following Ecology's receipt of the recommendations described in subsection (1), the City, PUD, and Tribes may extend the deadline only by written agreement. If the City, PUD, and Tribes cannot agree to an extension, the PUD shall immediately request Ecology to rescind any water right change action that is submitted to Ecology since the Agreement became effective even if Ecology has taken final action. The City may immediately reapply for the change. The intent of this provision is to secure the Tribes' right to challenge these changes in the event that Lower Skagit River instrream flows are not established within the specified schedule.

d. In the event that Ecology approves the changes referred to in subsection IV.C.2.c(3) above, the PUD shall ensure that any water rights documents issued by Ecology that purport to effecturate these changes shall be expressly and clearly conditioned to require compliance with this Agreement. Regardless of whether Ecology so conditions the document(s), the PUD shall, by its own authority, enforce the conditions of this Agreement when using these water rights.

e. The PUD may, at its option, negotiate with upstream Skagit River dam operators for release of flows to maintain the agreed upon flow levels downstream from the PUD Pipeline Crossing.

3. To guarantee in perpetuity to the Upper Skagit Indian Tribal Community for non-discriminatory use by all residents within the Bow Hill Indian lands and the Upper Skagit Indian Reservation a water quantity of 0.75 mgd based on demands identified annually and projected for five and twenty years by the Upper Skagit Indian Tribal Community and based on amendment to the existing wholesale contract with the Upper Skagit Tribal Community. Government-owned and operated uses will be subject to conservation and curtailment programs for both the Reservation and off-Reservation water uses as outlined in Exhibit A, which is incorporated herein. Government-owned and operated economic development on the Reservation, such as the Tribe's gaming facilities, hotels, and similar facilities, will be considered services that generate governmental revenue and will receive the second highest priority after residential domestic use. Similar government-owned

and operated commercial services within the City's and PUD's service area will receive the same status.

4. The PUD agrees not to provide any water service to users or property located within the Swinomish Indian Reservation without prior written approval of the Swinomish Indian Tribal Community The PUD agrees not to provide any water service to users or property located on Upper Skagit Reservations or other Indian Lands at Bow Hill without the prior written approval of the Upper Skagit Indian Tribe.

5. To assist Ecology in the adoption of instream flow rules for the Lower Skagit River and Cultus Mountain streams within the time period set forth in subsection IV.C.2.c. of this Agreement.

6. To actively support and provide input at both a policy and technical level to County officials regarding implementation of Section 63 of the Growth Management Act, such that building permits will only be issued if there is an adequate potable supply of water that can be withdrawn from groundwater without impacting instream flows;

7. To actively seek amendment of the CWSP and adoption of County ordinances that require, in lieu of individual wells, connection of new individual/single family homes to public water systems where the proposed development is within the designated service area of existing utilities and timely and reasonable service is available. Also, to limit the use of the 5,000 gallons per day exemption in those areas of the County experiencing inadequate Skagit River Basin Instream Flows that may be occurring as a result of groundwater withdrawals.

8. To seek funding sources to contribute: towards the development and implementation of long-term watershed management programs; towards the development of a coordinated water delivery system throughout the CWSP service area; and towards achieving the objectives of this Agreement. This provision does not supersede or in any way affect the PUD's financial commitment as set forth in Section IV.C.2.

D. The County agrees to the following:

1. To implement Section 63 of the Growth Management Act, such that building permits will only be issued if the parcel is served by a public water system or if there is an adequate supply of potable water that can be withdrawn from groundwater without adversely impacting Skagit River Basin Instream Flows, other than as agreed herein;

2. To actively work with all parties to address the 5000 gallon permit exemption for all public water systems and for all individual water systems in those portions of Skagit County that are impacted by inadequate Skagit River Instream Flows that may be occurring as a result of surface or groundwater diversions. Skagit County reserves the right to allow exempt wells for single family systems in the Skagit River Basin above the PUD Pipeline Crossing.

3. To seek amendment of the CWSP and related County implementing ordinances to require connection of new individual/single family homes to public water systems to achieve conservation of resources where the proposed development is within the designated service area of existing utilities and timely and reasonable service is available.

4. To assist Ecology in establishing instream flow rules for the Skagit River below the PUD Sedro Woolley Pipeline Crossing, with the goal of establishment within four years from the effective date of this Agreement.

5. To seek the goals of; (1) providing certainty and stability for water supplies for citizens of Skagit County; (2) to secure adequate streamflow for Ecology designated Low Flow Streams during critical periods to meet fisheries needs; (3) to encourage public water suppliers to provide water from the mainstem of the Skagit River for water users near Ecology Low Flow Streams where withdrawals may have direct impacts on in-stream resources; and (4) to evaluate, jointly with other parties, streams for possible designation by Ecology as Low-Flow Streams.

E. Ecology agrees to the following:

1. To process any City or PUD requests for changes identified in this Agreement, and to expressly and clearly condition any documents effectuating changes to existing rights to require compliance with this Agreement. Ecology agrees to seek to the extent possible, to enact all necessary rule and water right changes necessary to implement this Agreement;

2. Upon receipt of either the joint or differing recommendations described in subsections IV.B.2.c. (1) and IV.C.2.c.(1), Ecology shall immediately file a Preproposal Statement of Inquiry (CR 101), indicating its intent to adopt Cultus Mountain Instream Flows and Lower Skagit River Instream Flows. Ecology shall seek to complete formal rulemaking by filing a CR 102 within eighteen (18) months of its receipt of the joint recommendation or deferment described in IV.B.2.c(1) and IV.C.2.c (1), with a goal of adopting final rules within two years of its receipt; and

3. Until the adoption of Lower Skagit River and Cultus Mountain Instream Flows provides a framework for determining the availability of water for future appropriations, no final decisions will be made on any water right permit applications within that portion of the Skagit River Basin which lies within WRIA3 which could affect or be affected by those instream flows.

4. In signing this Agreement, Ecology is only obligated to take those actions set forth in this section and is not obligated by or agreeing to any other specific provisions of this Memorandum of Agreement.

F. The Department of Fish and Wildlife agrees to the following:

1. The Tribe and WDFW will provide the fisheries and fisheries habitat management criteria for input into the IFIM study and recommended Lower Skagit River Instream Flows.

2. WDFW will make a recommendation regarding the adequacy of the jointly developed recommended instream flow for Lower Skagit River Instream Flows to Ecology. WDFW's recommendation decision will be based upon the jointly developed recommendations consistency with the fisheries and fisheries habitat management criteria.

3. In the event that the parties cannot reach an agreement on jointly developed recommended instream flow for Lower Skagit River Instream Flows, WDFW will make a recommendation regarding the differing recommendations for Lower Skagit River Instream Flows to Ecology.

4. WDFW will provide appropriate technical support for developing recommended instream flows for the Cultus Mountain Streams.

5. WDFW is in no way obligated or bound by any other provision of the Memorandum of Agreement, except as outlined in the above four items.

G. All Parties agree to the following:

1. That the long term objective is to develop a comprehensive watershed management plan for the Skagit River Basin designed to manage the use of the water resources to meet both instream and out of stream objectives defined by the City, PUD and Tribes.

   a. To collaborate in investigating all alternatives so as to secure adequate flows to meet instream needs for portions of the Skagit River upstream from the PUD pipeline crossing at Sedro Woolley and out-of-stream needs within the surface areas defined within the CWSP. The Parties will establish a Skagit River Flow Management Committee (SRFMC) comprised, at a minimum, of representatives of signatories to this Agreement. This Committee will investigate alternatives towards securing adequate flows to meet instream and out-of-stream needs, design a study process for the Skagit River, and develop a management and monitoring plan to this end. The Parties anticipate completion of a management plan over a period of two to five years.

   b. To actively attempt to establish by rule, within a period beginning on the effective date of this Agreement and extending for five years, instream flows for the entire Skagit River Basin and its tributaries. The Parties agree to develop funding mechanisms to contribute to investigations that will establish these flows.

2. To reach agreement prior to expanding service areas beyond those identified in the CWSP. Such agreement will be based on evaluations of additional needs existing at the time, and after considering additional needs that may exist after the 50-year term of this Agreement. If the Parties cannot agree, then they may not seek or approve any changes relating to water quantity associated with the expansions of service areas for a period of 50 years from the effective date of this Agreement.

3. A work plan and budget for implementing this Agreement will be developed by the City and PUD in draft form within 60 days of the effective date of this Agreement. An adopted work plan and budget will be prepared by the City and PUD within six months of the effective date of this Agreement.

4. The Skagit River Flow Management Committee (SRFMC) shall be responsible for identifying and recommending studies and management responses, and in guiding the development, review, and approval of Skagit River Watershed Management strategies for the signators to this Agreement related to activities that have a measurable impact on the flow in the Skagit River while taking into consideration previously settled hydroelectric agreements. The objective of the instream flow studies is to establish a recommended flow upstream of the Sedro Woolley pipeline crossing for use in the SRFMC Management Plan. The signators to this Agreement agree to establish written response plans based on monthly climatic and flow criteria to help establish an appropriate management response as generally described below.

5. The parties recognize that there is a possibility that the City's 54.94 mgd and the PUD's 27.52 mgd recognized in this agreement as not subject to the Lower Skagit River Instream Flows may reduce Skagit River flows below the established flows. The attached Water Shortage Response Plan is incorporated by reference into this Agreement, and will be implemented in the event that this occurs.

6. No rights, claims, and adjustments identified in this agreement can be confirmed through this Agreement. Confirmation can only be done through an adjudicative process.

7. WDFW is in no way obligated or bound by any other provision of the Memorandum of Agreement, except as outlined in section IV.F.

V. GENERAL PROVISIONS

A. Duration. The term of this Agreement is 50 years from its effective date. The Agreement may only be amended or modified during the 50-year term by mutual written agreement of all signatories. The Agreement will extend beyond 50 years if all parties agree.

B. Severability. If any provision of this Agreement, or the application thereof to any person or circumstance, is found to be invalid or unenforceable, the remainder of the provisions of this Agreement, or the application of such provision to persons or circumstances other than those as to which it is found to be invalid or unenforceable, as the case may be, shall not be affected thereby.

C. Dispute Resolution. If a dispute arises between two or more parties concerning any provision of this Agreement, or application thereof, any such disputing party may send a written request to the other parties requesting a meeting, to be scheduled within 15 days of the parties' receipt of the request. The parties shall then meet together to discuss the dispute and attempt resolution.

D. Enforcement.

1. Between the City, PUD, and Tribes:

a) Notice of Failure. If any party(ies) ("Notifying Party") believes that another party (ies) is in violation of this Agreement or that a violation is threatened, the Notifying Party shall give written notice ("Notice") to the allegedly violating party (ies) of such violation and demand corrective action sufficient to cure the violation.

b) Failure to Respond. If the allegedly violating party (ies):

1. Fails to cure the violation within 30 days after receipt of the Notice; or

2. Under circumstances where the violation cannot be reasonably cured within the 30-day period, fails to begin curing such violation within the 30-day period; or

3. Fails to continue diligently curing such violation until it is finally cured; the Notifying Party may bring an action as provided in subsection c. of this Section.

c) Actions. The Notifying Party may bring an action at law or in equity in a court of competent jurisdiction: to enforce the terms of this Agreement; to enjoin the violation by temporary or permanent injunction; to recover any damages to which it may be entitled for violation of the terms of this Agreement; and to require restoration of resources (which includes, but is not limited to, water and fisheries) to the condition that existed prior to any such injury.

d) Nature of Remedy. The Notifying Party's rights under this Section apply equally in the event of actual or threatened violations of the terms of this Agreement. The Notifying Party may be entitled to injunctive relief in addition to such other relief, including specific performance of this Agreement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies. The remedies described in this paragraph shall be cumulative and shall be in addition to all remedies now or hereafter existing in law or in equity.

e) Enforcement Discretion. Enforcement of the terms of this Agreement shall be at the discretion of each Party entitled to performance, and any forbearance by such party to exercise its rights under this Agreement in the event of any breach of any terms of this Agreement by another party shall not be deemed or construed to be a waiver, laches, or estoppel of such

rights. No delay or omission by a party in the exercise of any right or remedy upon breach shall impair such rights or remedy or be construed as waiver, laches, or estoppel.

2. By the City, PUD, and/or Tribes against Ecology.

a) The City, PUD, and Tribes agree to together take action to ensure, by all appropriate legal means necessary, that Ecology;

1) Does not take final action on any water rights-related applications, claims, or adjustments, submitted by any person or entity, in or in any way affecting the Skagit River basin, whether or not the person or entity is subject to this Agreement, until after Lower Skagit River and Cultus Mountain Instream Flows are established, other than those applications specifically set forth in Section IV E.1 of this Agreement; and

2) Acts expediently to establish Lower Skagit River and Cultus Mountain Instream Flows in order to meet the schedule established in this Agreement.

E. Rights Against Non-Parties. As to non-Parties to this Agreement, the Tribes, by signing this Agreement, in no way diminish, relinquish, or waive their respective legal rights, including but not limited to federal reserved water rights and treaty rights, in any administrative or judicial forum at any time.

F. Successors and Assigns. This Agreement shall be binding on the Parties and on their successors in interest and assigns.

G. No Third Party Beneficiaries. No third party is intended to, or shall have, any rights under this Agreement. The Parties intend that this Agreement be strictly between themselves, and therefore, only the Parties have any right to enforce this Agreement or any provision of this Agreement.

H. No Release of Third Parties. This Agreement is not intended by the Parties to act, nor shall it act, to release any third parties not named herein from any claims or liabilities whatsoever.

I. The parties recognize that there are significant and material considerations not specifically set forth in the Agreement that make the relationship of the parties hereto unique. Because of the unique situation herein, it is the express intent and purpose of the parties that this Agreement not be viewed nor provide precedent beyond the express scope and purpose herein. Therefore, it is agreed between the parties that they will not use this Agreement as precedent outside the Agreement nor should anyone not a party hereto attempt to use the Agreement as precedent against any of the parties.

J. Headings Not Controlling. The headings in this Agreement are for convenience and reference only, and are not part of this Agreement, and in no way amplify, define, limit, or describe the scope or intent of this Agreement.

Attachments: Exhibit A - Water Shortage Response Plan, 7 pages

SIGNED:

_____ Date:_____
Dean Maxwell
Mayor, City of Anacortes

_____ Date:_____
James P. Kirkpatrick
General Manager
Public Utility District #1 of Skagit County

_____ Date:_____
Ted W. Anderson, Chair
Skagit County Commissioner

_____ Date:_____
Robert R. Hart
Skagit County Commissioner

_____ Date:_____
O. Harvey Wolden
Skagit County Commissioner

_____ Date:_____
Floyd Williams
Chairman, Upper Skagit Indian Tribe

_____ Date:_____
Wa Walton
Robert Joe, Sr., Chairman
Swinomish Indian Tribal Senate

_____ Date:_____
James Delano Roberts
Chairman, Sauk-Suiattle Indian Tribe

_____ Date:_____
Mary Riveland
Director, Department of Ecology

_____ Date:_____
Bernard Shanks
Director, Department of Fish & Wildlife

Reserved for Cross-Connection Control Plan

APPENDIX B

ANACORTES-FIDALGO ISLAND
COORDINATED WATER SYSTEM PLAN
SYSTEM STANDARDS

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ANACORTES-FIDALGO ISLAND
COORDINATED WATER SYSTEM PLAN

WATER SYSTEM STANDARDS

GENERAL CONSIDERATIONS

Intent

These water system standards are intended to provide minimum criteria for design and construction of new water system facilities and the extension of existing systems within the Anacortes and Fidalgo Island Critical Water Supply Service Area. Implementation of these standards will result in efficient, cost-effective water system operation and mutually beneficial operational standards for the various water purveyors. Contents of these standards comply with Department of Social and Health Services' minimum design guidelines and administrative codes. In addition, these standards refer to, and adopt by reference, particular sections of the American Public Works Association and American Water Works Association standard specifications.

It is not intended to mandate the reconstruction of existing water systems to meet these Standards. However, water utilities are encouraged to comply whenever the repair of existing failed facilities becomes necessary.

Abbreviations

APWA	American Public Works Association
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
BFV	Butterfly Valve
DSHS	Washington State Department of Social and Health Services, Division of Health
WDOE	Washington State Department of Ecology
CWSSA	Critical Water Supply Service Area
CWSP	Coordinated Water System Plan
DI	Ductile Iron (pipe, fittings)
GI	Galvanized Iron (pipe)
GV	Gate Valve
PE	Polyethylene (pipe)
PRV	Pressure-Reducing Valve
PVC	Polyvinyl Chloride (pipe)
RCW	Revised Code of Washington
WAC	Washington Administrative Code
WUCC	Water Utilities Coordinating Committee
cfs	Cubic Feet Per Second
in	Inch(es)
fps	Feet Per Second

ft	Feet (head)
gpm	Gallons Per Minute
mgd	Million Gallons Per Day
psi	Pounds Per Square Inch (pressure)

Standards Review

The WUCC shall meet annually with the specific purpose to review and amend these standards as necessary.

Standards Precedence

These standards represent minimum criteria for design and construction of new water systems and the extension of existing ones within the CWSSA. Water purveyors whose standards in any area covered herein are more stringent will be expected to enforce the more restrictive specification.

Flow Measurement

All services shall be installed so that each individual residential, industrial, commercial, or institutional customer will be separately metered. Exceptions where purveyors provide system service to less than 50 customers will be acceptable; however, in all cases, metering of each service is encouraged by the WUCC. Service connections whose sole purpose is fire protection may not require metering.

Cross Connections

All water purveyors shall adopt and enforce a cross-connection control program as part of the General Operations Program required by WAC 248-54-195.

Interties

Adjacent water purveyors shall continue to assess the feasibility of system interties for the purpose of joint emergency operation pursuant to WAC 248-54-205.

General Operations Program

Every water system shall prepare a general operations program in accordance with WAC 248-54-195(b). DSHS will assist purveyors in preparing their plans, the content of which will be consistent with the size, complexity, past performance, and use of the public water system being considered.

Emergency Operation Plan

In connection with the operations program, each purveyor will develop an emergency operation plan consistent with the DSHS Emergency Planning Instructional Guidebook, DSHS, April 1982.

Conservation

Each water purveyor is encouraged to prepare a water conservation program and distribute the program at least annually to assure awareness of the value of conservation among all water subscribers.

DESIGN STANDARDS

General

The design of new public water systems and revisions to existing ones shall be conducted in accordance with sound engineering practices such as those described in Recommended Standards for Water Works, Committee Report of the Great Lakes - Upper Mississippi River Board of State Sanitary Engineers; Sizing Guidelines for Public Water Supplies, Department of Social and Health Services, State of Washington, American Public Works Association (APWA) guidelines; American Water Works Association (AWWA) standard specifications; or other design criteria or standards which demonstrate widely accepted engineering practices.

Fire Flows

Minimum fire flows shall be provided as detailed in the following table. Flow rates in excess of those listed may be required for specific development, particularly in industrial, commercial, or multi-family residential communities.

Anacortes-Fidalgo Island
Coordinated Water System Plan
Minimum Fire Protection Requirements

Skagit County Land Use Designation	Minimum Fire Flow(1) Rate	Minimum Fire Flow(1) Duration	Maximum Distance Between Hydrants(4)
Industrial(2)	1,000	1 Hour	300 ft
Commercial-Limited Industrial(2)	750	1 Hour	300 ft
Multi-Family Residential	750	1 Hour	600 ft
Residential(3)	500	30 Min.	600 ft
Residential Reserve(3) (1)	500	30 Min.	600 ft
Rural Intermediate (2½)	None	None	
Rural (5)	None	None	
Agricultural Reserve	None	None	
Agricultural	None	None	
Forestry	None	None	
Public Use	None	None	

(1) Individual fire hazards may be subject to more stringent flow requirements when evaluated individually by the local fire protection authority. Target capabilities shall be based on meeting the Insurance Services Office (ISO) Guide for Determination of Required Fire Flow, latest edition.

(2) An approved water supply capable of supplying required flow for fire protection shall be provided to all premises upon which buildings or portions of buildings are constructed. When any portion of the building protected is in excess of 150 feet from a water supply on a public street, there shall be provided, when required by the local fire protection authority, on-site fire hydrants and mains capable of supplying the required fire flow.

(3) Where net development density is less than 1.0 dwelling unit per acre, the area may be considered rural and exempt from fire protection requirements.

(4) Schools, churches, nursing homes, hospitals, and other public buildings situated inside residential areas shall be considered commercial hazards for purposes of fire protection.

Fire Hydrants

All fire hydrants shall comply with standards issued by the Skagit County Fire Marshall. Hydrants shall be the dry-barrel type with 2 hose outlets whose inside diameters are 2-1/2 inches and one large pumper outlet with inside diameter of 4 inches. Small ports shall have national standards threads measuring 3.0625 inches outside diameter at 7-1/2 threads per inch. Pumper ports shall be No. 3 Pacific Coast threads measuring 4.828 inches outside diameter at 6 threads per inch. The operating nut shall be 1-1/4-inch pentagon. When fire protection facilities are to be installed by the developer, the work shall include access roads, serviceable prior to and during the time of construction.

Hydrants shall be set plumb to finished grade with the pumper port facing the street. The lowest outlet shall be no less than 16 inches above grade level and with no less than 36 inches of clear area around the hydrant for clearance. View of hydrants shall not be obstructed by any structure or vegetation within a distance of 50 feet in the direction of vehicular approach.

Hydrants located in areas subject to heavy vehicular traffic such as parking lots or driveways, shall be protected against damage from collision. The color of all public hydrants shall be determined by local fire authority. Location markers for flush hydrants shall carry the same color background as determined above.

It shall be the installer's responsibility to notify the fire department in writing when a hydrant is available for use. Upon approval of the local fire protection authority and water utility, all hydrants shall become the property of the local fire protection authority. The location of all valves and fire hydrants installed shall be properly and accurately marked on identifiable plans or drawings, one copy of which shall be furnished to the Fire Chief at the time of inspection.

All fire alarm systems, fire hydrant systems, fire extinguishing systems (including automatic sprinklers), wet and dry standpipes, basement inlet pipes, and other fire protection systems and appurtenances shall meet the approval of the local fire protection authority as to installation and location and shall be subject to periodic tests. Plans and specifications shall be submitted to the local fire protection authority for review and approval prior to construction.

Minimum Pipe Size

Pipe sizes shall be established by hydraulic analysis using flow requirements based on maximum instantaneous domestic or maximum instantaneous domestic plus fire flow demands where the latter is required.

Maximum instantaneous domestic water demand shall be computed by considering realistic build-out of approved land use designations projected in the area proposed for water service. System records of peak use or water use criteria from DSHS Sizing Guidelines shall be used.

Fire flow requirements shall be based upon criteria established above.

Minimum pipe diameter sizes shall conform to the following:

Skagit County Land Use Designation	Minimum Pipe Diameter(1) 2-Inch	6-Inch	Other
Industrial			(2)
Commercial-Limited Industrial			(2)
Multi-Family Residential		X	
Residential		X	
Residential Reserve		X	
Rural Intermediate	X		
Rural	X		
Agricultural Reserve			(3)
Agricultural			(3)
Forestry			(3)
Public Use			(3)

1. Alternate sizing may be allowed or required by the fire protection authority responsible for the area being served.

2. Sizing shall provide required fire flow at minimum acceptable system pressures. Fire flow quantity shall be based on standards adopted by local fire protection authority.

3. These land use designations imply individual systems and are exempt from these standards.

Water Pressures

New water systems and additions to existing ones shall provide the following minimum pressures for the type of system being installed.

Type of System & Design Condition	Minimum Pressure
In areas where fire flow is not required. Minimum pressure at maximum instantaneous domestic demand	30 psi
Areas where fire flow is a design consideration. Minimum pressure throughout the system at maximum instantaneous domestic design plus design fire flow	20 psi

All water systems and their individual portions shall be designed to operate within a range of 30 to 80 psi. Average operating pressure should be 60 psi. Where system pressures are expected to exceed 80 psi, special consideration shall be given to the selection of pipe materials and installation practices. In addition, each individual service (other than fire protection) should be provided with a pressure-reducing valve designed and used to provide suitable pressures to the customer.

Disinfection During Construction

Each portion of a water system shall be disinfected before being put into service. Procedures for disinfection shall comply with AWWA and APWA standards. For new construction, samples shall be taken and analyzed for bacteria and the test results approved before the new construction may deliver potable water.

Storage

Standby and equalizing storage shall be provided in accordance with Sizing Guidelines for Public Water Supplies, DSHS, latest edition. In addition, minimum fire flow volumes (required rate multiplied by duration) shall also be provided.

Booster Pumps

Where continuously running booster pumps are required to provide minimum system pressures, a pressure regulator and reservoir return line shall be installed downstream of the pumps and adjusted to assure no undue warming of water will occur during periods of low system demand.

Valving

Valves shall be provided at all crosses and tees. The number of valves required shall be the number of runs at the joint minus 1. Where short runs of less than 100 feet result, one valve for one end of such a run may be eliminated.

Unvalved pipe runs should not exceed 500 feet in industrial and commercial zones; 800 feet in residential areas.

Air Release and Blow-Off Valves

Automatic air release valves designed for potable water system service shall be provided at major high points throughout the system. Blowoff assemblies (other than fire hydrants) shall be installed on each dead-end pipe run and at selected low elevation points in the system. Valves designed for combined service shall be permitted at the appropriate system locations.

System Location

All water system components including pipe, valves, pumps, reservoirs, impoundment structures, treatment facilities, and storehouses shall be located on public rights-of-way, properties held in fee simple by the purveyor, or easements.

Easements for waterlines should be 20 feet in minimum width, if possible, and no pipe should be located closer than 5 feet from an easement edge.

Utilities Separation

Water mains shall be laid at least 10 feet horizontally from any existing or proposed gravity or pressure sewer. Where water mains cross sewers, the water line shall be above the sewer with a minimum of 18 inches of separation provided from the outside bottom of the water pipe to the outside crown of the sewer pipe. One full length of water pipe shall be located with its center over the sewer to provide maximum separation of water pipe joints from the sewer.

Cover

A minimum 36 inches of cover shall be provided from pipe crown to finished grade for all transmission and distribution pipe. Individual services, utilizing pipe of less than 2-inch diameter, shall have a minimum of 18 inches of cover.

Sources

Development, design, and construction of new water supply sources shall comply with latest DOE and DSHS standards and regulations.

Water wells shall be constructed and maintained in strict compliance with WAC 173-160.

As-Built Drawings

The as-built final installation of all new systems and improvements should be documented by certified as-built drawings. Such drawings should reside in a safe location provided by the water purveyor or its designated agent.

PRODUCT SPECIFICATIONS

General

All materials intended for use in a water system construction shall be new, undamaged, and intended for water system service. Materials and workmanship shall comply with relevant AWWA Specifications, applicable sections of APWA Standard Specifications for Municipal Public Works Construction, latest edition, and as provided herein.

Pipe

Pipe used in the construction of water system facilities shall conform with the following specifications:

Transmission Pipe

AWWA C300	-	Reinforced Concrete Pressure Pipe - Steel Cylinder Type
AWWA C301	-	Prestressed Concrete Pressure Pipe - Steel Cylinder Type
AWWA C303	-	Reinforced Concrete Pressure Pipe - Steel Cylinder Type, Pretensioned
AWWA C200	-	Steel Water Pipe with an AWWA approved protective coating and lining
AWWA C151	-	Ductile Iron Pipe
AWWA C900	-	PVC Pressure Pipe

Distribution Pipe

AWWA C900	-	PVC Pressure Pipe
AWWA C151	-	Ductile Iron Pipe, cement mortar lined in accordance with AWWA C104, designed to AWWA C150, Thickness Design for Ductile Iron Pipe. Pipe joints shall conform to AWWA C110 or C111

ASTM D 2241	-	Standard Specification for PVC Plastic Pipe 200 psi rated, SDR 21, bell by tapered end in accordance with ASTM D 3139
ASTM A 120 A 53	-	Standard Specification for Galvanized Iron Pipe, Grade A, Schedule 40 minimum. Hot-dipped galvanized, screwed fittings, 4-inch diameter and smaller

Service Pipe

ASTM D 2239 D 1248	-	Standard Specification for Polyethylene Tubing, SDR 7 rated for 160 psi working pressure. Pipe shall bear National Sanitation Foundation seal for use in potable water service
ASTM B 88	-	Standard Specification for Copper Tubing, Type K, soft

It is suggested that all buried plastic pipe have tracer tape, marked "WATER", Lineguard Type II or equivalent, placed above the pipe as the trench is backfilled.

Fittings

Fittings for reinforced or prestressed concrete cylinder pipe shall be fabricated in accordance with details included with the AWWA Standard to which the pipe was designed and manufactured.

Fittings for plastic and ductile iron pipe shall be ductile or Class 250 gray iron conforming to AWWA C110 or C111, cement mortar lined in accordance with AWWA C104. All plain end fittings shall be ductile iron where mechanical joint retainers are used.

Galvanized iron pipe shall be joined by threaded fittings (ANSI B2.1) made from material conforming to ASTM A 47, Grade 32510, banded and hot-dipped galvanized inside and out. Fittings for galvanized iron pipe more than 4 inches in diameter shall receive coal tar coating per AWWA C203.

All couplings shall be constructed of gray iron sleeves and ductile or malleable iron followers. Bolts and nuts shall be ductile iron. All buried couplings shall receive field painting with protective coat of coal tar paint.

Valves

Gate valves shall conform with APWA C500 specifications. Gate valves for buried service, 2-1/2 inches and larger, shall be iron body, bronze-mounted, double disk, non-rising stem with O-ring stem seal. Smaller valves shall be non-rising stem wedge disk all brass or bronze, 125 psi rated. Outside screw and yolk valves may be permitted where such valves shall be located within a utility vault.

Butterfly valves shall conform with AWWA C504 Class 150-B, short body for direct burial service, with position indicator where used above grade.

All valves shall open counter-clockwise and where used in buried service, shall be supplied with standard 2-inch operating nut.

Check valves, 3 inches and larger, shall be iron body, iron disc, bronze mounted, swing, clear waterway, quiet closing or lever and spring type.

Small check valves shall be bronze body, bronze mounted, swing type, flanged or screwed.

Air release and vacuum relief valves shall be iron bodied with stainless steel or plastic floats. Guides, pins and bushings shall be stainless steel or bronze.

PRV's shall be iron bodied globe or angle style, diaphragm type, pilot-controlled, and hydraulically operated. The valve stem shall be supported by both upper and lower guide bearings. PRV's shall be flanged or mechanical-joint fitted.

Valve Boxes

All buried valves shall be provided valve boxes. Cast iron, 2-piece, slip-type will be preferred and concrete pipe or plastic pipe type will be accepted. All valve boxes shall have a cast iron cover with either the word WATER or W cast into it.

Title 11

Utilities

Chapter

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Title 11 – Utilities
Chapter 1 – General Provisions

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11-01.110	Effective Date

Legislative History

Enacted:

Codifying Title 11, Ord. 195 (11/5/03), BIA (11/25/03).

Repealed or Superseded:

Amendment to Utility Ordinance, Ord. 123 (5/12/97) (adding new sections to Art. XVII, "Violations of Ordinance").
Amendment to Utility Ordinance, Ord. 121 (9/10/96), BIA (10/20/96) (promulgating additional enforcement measures to ensure timely payments of assessments).
Amendment to Utility Ordinance, Ord. 109 (2/7/95) (amending the provision for judicial review).
Amendment to Utility Ordinance, Ord. 108 (1/10/95), BIA (2/2/95) (clarifying meaning of amendment 106).
Amending Ordinance No. 65, Utility Ordinance, Ord. 106 (7/12/94) (amending provision for collection of assessments).
Amending Ordinance No. 65, Utility Ordinance, Ord. 105 (6/22/94), BIA (6/29/94) (amending provisions regarding the final roll and the appeal of assessments).
Amendment to Ordinance 65, Ord. 67 (12/5/89), BIA (9/24/90) (amending the provision for an assessment lien).
Resolution to Adopt "Legislative Findings" as Appendix No. 1 to Utility Ordinance No. 65, Enacting Res. 89-12-97 (12/5/89).
Swinomish Indian Tribal Community Utility Ordinance, Ord. 65 (10/10/89), Enacting Res. 89-10-95, BIA (10/23/89) (repealing and superseding Ord. 51).
Utility and Environmental Service Ordinance, Ord. 51, Enacting Res. 85-6-41 (6/4/85), BIA (7/10/85).
Setting New Water Rates for the Swinomish Tribal Community Water System, Res. 81-4-824 (4/14/81).

Rescinded:

Ord. 73 (7/19/90), BIA (disapproved).

[Ed. Note. Ord. 109 is signed, but not dated, by BIA Puget Sound Agency Superintendent Bill Black. The substantive provisions of Amendment to Tribal Utility Ordinance Relating to Appeals of Assessments, Res. 94-4-34 (4/26/94), are identical to the substantive provisions of Ord. 105. Tribal archives do not contain a copy of Ord. 73. Ord. 65 was originally numbered Ord. 62.]

11-01.010 Title.

This Chapter may be referred to as the "Utilities Code."

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-01.020 Purpose and Scope.

The purpose of this Chapter is to define the policies, establish the organization, and identify the necessary rules and regulations for the operation, maintenance and management of the public utilities within the exterior boundaries of the Swinomish Indian Reservation.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-01.030 Declaration of Policy.

(A) It shall be the policy of the Swinomish Indian Tribal Community to operate, maintain and manage the public utilities on the Reservation so that the Reservation residents have available a level of service designed to minimize exposure to adverse conditions that could negatively impact the physical and environmental health of any individual or the community as a whole.

(B) It shall also be the policy of the Swinomish Indian Tribal Community that the operation, maintenance and management of the public utilities shall be carried out through a safe and efficient program and in a financially responsible, cost-effective and self-sufficient manner.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-01.040 Authority.

The Swinomish Indian Tribal Community's authority to establish a Utility organization and to levy appropriate user fees and assessments to all residents and organizations on the Reservation and to regulate the discharge, collection, disposal, distribution, transport and final disposal of all drinking water, solid waste and sewage on the Reservation is derived from its governmental status as a federally recognized Indian Tribe organized pursuant to Section Sixteen of the Indian Reorganization Act of 1934, and is provided in Article VI

Section 1(c), (f), (i), (k), (l), (m), (q) and (s) and Section 5 of the Tribe's duly adopted Constitution. The Tribal Community's authority to borrow funds and to provide for the sale and issuance of bonds, warrants, notes and other obligations is provided in Article VI, Section 1(l) of the Tribal Constitution.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-01.050 Findings.

As part of the Senate's deliberations on the adoption of Ordinance No. 65, on December 5, 1989, the Swinomish Tribal Community Utility Ordinance, the Senate found as follows:

(A) The Senate is the governing body of the Swinomish Indian Tribal Community and the Reservation, which occupies the peninsula at the southeast end of Fidalgo Island in Skagit County, Washington. The Reservation comprises approximately 7,000 acres of uplands.

(B) Fidalgo Island is surrounded by saltwater bays, straits, and channels and has limited quantities of fresh water available from wells in the island's underlying groundwater aquifers. During the island's early settlement by non-Indians, relatively shallow wells provided a satisfactory water supply to the residents of the Reservation as well as the rest of Fidalgo Island. For the last ten (10) years or more, however, increased population, residential development, and the full-time occupation of previously seasonal residences has resulted in a shortage of potable water. As a result, wells located near the island's waterfront have gone dry for several months during the summer and have experienced saltwater intrusion. Older homes with shallow wells have experienced longer shortages due to construction of newer deeper wells.

(C) Although a supply of water is piped from the Skagit River to the City of Anacortes on Fidalgo Island, the domestic water supply is not available to communities that are not located near the pipeline or the municipal boundaries of the City of Anacortes.

(D) In 1984, the Skagit County Board of Commissioners determined that Fidalgo Island constituted a critical water supply area for the purposes of applicable state statutory law. That law required, among other things, that local state governments having jurisdiction over Fidalgo Island, including Skagit County, municipal governments, and public utility districts, meet to resolve problems associated with the water supply shortage. Although not required to participate, the Tribe voluntarily participated in all of the critical water supply meetings, which resulted in the adoption of the Fidalgo Island Critical Water Supply Plan (the "Plan").

(E) In 1986, the State of Washington, Department of Social and Health Services, imposed a moratorium on residential and other construction on Fidalgo Island as a result of the water shortage. Although the state moratorium is not applicable to trust lands or other lands owned by tribal members, the State's action recognized a serious health problem associated with the lack of sufficient amounts of safe drinking water.

(F) As part of the Plan, the affected jurisdictions executed a Memorandum of Understanding recognizing the Tribe as the purveyor of public drinking water for all lands within the exterior boundaries of the Reservation. Under the MOU, the Tribe accepted the responsibility for providing water to all residents of the Reservation.

(G) In 1986, the Tribe adopted Ordinance No. 51, creating the Swinomish Utility Commission. The Commission was formed initially to oversee the construction and development of a water supply system for the delivery of safe drinking water to all residents of the Reservation. Non-Indian representation has been provided for on the Commission.

(H) In 1987, with partial funding from, and the full support of, the Washington State Department of Ecology, the Tribe constructed a centrally located well on the Reservation that withdraws water from a high quality and productive groundwater aquifer lying within the reservation boundaries. The Tribe also constructed water supply lines to the southern part of the Reservation where a majority of tribal members reside and where the Tribe's public housing is located. For the first time ever, satisfactory fire flow pressure was established at the higher elevations of the Reservation and reservation residents were no longer dependent upon water supplied from the neighboring town of LaConner, located east of the Reservation and Fidalgo Island.

(I) Subsequently, in 1987, the Tribe extended its water system to several communities on the west side of the Reservation along Skagit Bay. These communities are predominantly comprised of non-Indian residents who had been subject to the State's building and construction moratorium. The State moratorium was subsequently rescinded in those areas receiving water from the Tribe's Utility Authority.

(J) In 1988, the Tribe constructed an additional well to increase the capacity of the Tribe's water system and in addition constructed a water supply line connecting the Tribe's water system to the domestic water supply of the City of Anacortes. As a result, the Tribe has access to a supply of drinking water for reservation residents on an as needed and back-up basis.

(K) For the past twenty (20) years or more, a small group of approximately one hundred (100) homes located within the Reservation ("Westshore neighborhood") has operated a primary wastewater treatment facility to treat residential sewage. Effluent from that system does not receive secondary or tertiary treatment and is presently discharged into Skagit Bay through a transmission pipeline crossing tidelands owned by the United States in trust for the Tribe.

(L) During the past two (2) or three (3) years, the following events have occurred:

(1) The right-of-way granted by the Tribe for the pipeline crossing Tribal tidelands has expired and been terminated;

(2) The U.S. Environmental Protection Agency and the State Department of Ecology have required the homeowners group to construct and provide secondary treatment for its sewage; and

(3) The U.S. Environmental Protection Agency and the State have denied the homeowners group a waiver from this secondary treatment requirement.

(M) The failure to adequately and sufficiently treat residential sewage now poses a serious health problem and threat to the residents of the Reservation and the members of the Tribe. In addition to the residential population that provides only primary treatment to its sewage, the increasing residential population along the Reservation waterfront, particularly on the west shore, relies exclusively on inadequate septic tanks or cesspools that discharge into the marine waters surrounding the Reservation. As a result, all but a very limited portion of the tidelands surrounding the Reservation have excessive fecal coliform and other forms of contamination that prevent such tidelands from being certified by the State of Washington as safe for the production of shellfish for human consumption.

(N) Unhealthy and unsanitary conditions exist on residential upland areas of the Reservation to be served by the proposed sewer utility system as well as tribal tidelands and marine areas. Serious disease associated with sewage seepage and cesspools pose a significant health threat to the Reservation.

(O) Pollution of marine areas and tidelands around the Reservation reduces the potential productivity of aquaculture projects and natural reproduction on tribally owned tidelands. Both activities have been conducted successfully in the past and new aquaculture projects are now being contemplated to create tribal revenue and employment.

(P) Over half of the lands within the areas proposed for sewer construction are individual Indian trust lands that are leased in small residential lots to produce trust revenue for their Indian owners. Approximately fifty percent (50%) of the lots available for lease are presently not leased. Provision of sewer services and water will ensure that more lots are leased and that the income potential to the Indian owners is maximized.

(Q) Non-Indian owned fee lands are checkerboarded throughout the Reservation. The inclusion of non-Indian fee lands within the Tribe's sewer system is necessary to meet engineering requirements for the efficient operation of a comprehensive and economically feasible system.

(R) The Tribe has received federal grant funds from the U.S. Environmental Protection Agency as well as state funds from the State Department of Ecology to construct a sewage collection system and provide for the treatment of sewage generated on the Reservation. One of the principal purposes for such funding is to provide secondary treatment for the Westshore neighborhood, now providing only primary treatment. In

1988, the Tribe employed a Project Engineer to coordinate the construction of the sewage system as well as the construction of additional water transmission lines and to coordinate these projects with a road improvement project that has been funded by the Bureau of Indian Affairs.

(S) Several public hearings have been held to determine the level of interest in the construction of sewage facilities. The result has been near unanimous approval of the Tribe's proposed project.

(T) Because of the physical location of the Reservation on the southeast peninsula of Fidalgo Island, it is geographically impractical and economically infeasible to provide sewer and other utility services to Reservation residents with more than one utility system. Non-Indian and Indian land ownership and residences are interspersed throughout the reservation in a checkerboard pattern.

[History] Ord. 195 (11/5/03); Ord. 65, Appendix No. 1 (12/5/89).

11-01.060 Nonwaiver of Sovereign Immunity.

(A) The Swinomish Indian Tribal Utility Authority established by this Title is a governmental agency of the Tribe, and thereby retains all the rights of sovereign immunity of the Tribe. The Authority is not authorized to waive, and shall not waive, the sovereign immunity of the Tribe or any of its officers, agents, attorneys or employees, or anyone else acting at the direction of or on behalf of the Tribe.

(B) Any waiver of sovereign immunity made for the purpose of providing for the sale and issuance of bonds, warrants, notes or other obligations incurred by the Tribe shall only be made by the duly authorized resolution of the Senate and approval of the Bureau of Indian Affairs.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-01.070 Agency.

Any person who has the care, custody, control or management of any premises or building, or who has control of the operation thereof or the collection of rentals therefrom, shall, for the purposes of this Title, be deemed the agent of the owner of such premises or building, and the giving of all notices herein provided to that agent shall be deemed due notice to the owner. The mailing or delivery of bills for utility service charges, permit fees, connection, or trunkage charges, or other charges to that agent shall be deemed mailing or delivery to the owner.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-01.080 Definitions.

(A) Unless the context specifically indicates otherwise, the meaning of terms used in this Title shall be those meanings set forth in this Section.

(1) **"Appurtenances"** shall mean the real and personal property owned by the Utility Authority or the Tribe located on, near, or under the roadway and streets, including but not limited to fire hydrants, street lamps, street signs, valves, manholes, covers and drains.

(2) **"Authority"** shall mean the Swinomish Indian Tribal Utility Authority.

(3) **"Building Drain"** shall mean that part of the lowest horizontal piping of a drainage system that receives the discharges from soil, waste, and other drainage pipes inside the walls of the building and conveys it to the building sewer.

(4) **"Building Sewer"** or **"side sewer"** shall mean the piping connecting the building drain to the public sewer or other place of disposal, beginning two and one-half (2-1/2) feet outside the foundation wall.

(5) **"Commission"** shall mean the five (5) member Swinomish Tribal Utility Commission serving as the policy setting and governing body of the Swinomish Indian Tribal Utility Authority. This Commission shall constitute a "subordinate board" as defined in Article VI, Section 1(s) and a "subordinate organization" as defined in Article VI, Section 1(m) of the Constitution of the Tribe.

(6) **"Commissioner"** shall mean a member of the Commission.

(7) **"Comptroller"** shall mean the Tribal Controller of the Swinomish Indian Tribal Community.

(8) **"Engineer"** shall mean the person or firm designated by the Senate or Commission to perform engineering service for the Authority or his or her authorized assistants, representatives or employees.

(9) **"Industrial Wastes"** shall mean the liquid wastes from industrial processes.

(10) **"Manager"** shall mean the manager of the Authority, or his or her authorized deputy, agent, or representative.

(11) **"Owner"** shall mean the legal owner of deeded property or the tenant who has a present right of possession on tribal or allotted lands, or the beneficial owner of land held in trust by the United States.

(12) **"Paunch Manure"** shall mean the partially digested contents of the stomach of a ruminant, especially including the first chamber of said stomach (the rumen) during the time period immediately before and after the animal is slaughtered for meat and other by-products.

(13) **"Person"** shall mean any individual or firm, company, association, society, corporation or group.

(14) **"Private Sewage Disposal System"** shall mean any privately owned and maintained system that holds, treats, and disposes of sewage within the boundaries of a lot or parcel. Such systems include but are not limited to privies, septic tanks, and cesspools.

(15) **"Property"** shall mean the lot, tract, or parcel of land and any residential structure(s) affixed thereto for purposes that include, but are not limited to, foreclosure proceedings undertaken pursuant to this Chapter.

(16) **"Public Sewer"** shall mean a sewer that is owned or controlled by the Authority.

(17) **"Reservation"** shall mean all lands and waters within the exterior boundaries of the Swinomish Indian Reservation of the Swinomish Indian Tribal Community.

(18) **"Reservation Sewer and/or Water District"** shall mean a tribally chartered organization with authority under Chapter 11-04 of this Title to acquire, construct, operate, maintain, develop and regulate a system for disposal of sewage and provision of drinking water including treatment and disposal plants and all necessary appurtenances within a tribally authorized area of the Reservation.

(19) **"Reservation Utility Improvement District (RUID)"** shall mean a Reservation Utility Improvement District established under Chapter 11-03 of this Title.

(20) **"Sanitary Sewer"** shall mean a sewer pipe connected to building drains that carries sewage and into which storm, surface and ground waters are not intentionally admitted.

(21) **"Senate"** shall mean the Swinomish Indian Senate, the governing body of the Swinomish Indian Tribal Community.

(22) **"Sewage"** or **"wastewater"** shall mean a combination of water-carried wastes from dwellings, business buildings, institutions, industrial establishments and other sewer users.

(23) **"Sewage Treatment Plant"** shall mean all facilities for treating and disposing of sewage.

(24) **"Sewage Works"** shall mean all facilities for collecting, pumping, treating and disposing of sewage.

(25) **"Sewer"** shall mean a pipe or conduit for carrying sewage.

(26) **"Sewer Stub"** shall mean a public sewer line constructed to the property line or other designated location of the lot or parcel being served by the public sewer, and to which the building sewer may be connected.

(27) **"Single Family Dwelling"** shall mean any structure including a condominium, trailer, or mobile home, designed for occupancy by a single family.

(28) **"Structure"** shall mean anything constructed or located on the ground, including but not limited to trailers and house trailers, but not including fences and walls.

(29) **"Swinomish Indian Tribal Community," "Tribe,"** or **"Tribal Community"** shall mean the federally recognized Indian Tribe organized pursuant to Section Sixteen of the Indian Reorganization Act of 1934 that has jurisdiction over the Swinomish Indian Reservation

(30) **"Tribal Court"** shall mean the Swinomish Tribal Court.

(31) **"Water body"** shall mean any body of standing water.

(32) **"Watercourse"** shall mean any channel, streambed, or bottomland through which water flows, either continuously or intermittently.

(33) **"Wetlands"** shall mean any land that is inundated with surface or groundwater with sufficient frequency to support hydrophytic vegetation typically adapted for life in saturated or seasonally saturated soil. Wetlands generally include swamps, marshes, bogs, sloughs, potholes, wet meadows, river overflows, mudflats, and ponds.

(34) **"Shall"** is mandatory; **"May"** is permissive.

(B) The definitions found in this Section shall not be exclusive. Terms used in this Chapter may be defined in other Sections.

(C) Where a term is not defined it shall be given its usual and ordinary meaning.

[History] Ord. 195 (11/5/03); Ord. 108 (1/10/95); Ord. 106 (7/12/94); Ord. 78 (7/16/91); Ord. 65 (10/10/65).

11-01.090 Repealer.

This Title repeals and supersedes Swinomish Indian Tribal Utility Ordinance No. 65.

[History] Ord. 195 (11/5/03).

11-01.100 Severability.

The invalidity of any section, clause, sentence or provision of this Title shall not affect the validity of any part of this Title that can be given effect without such invalid part or parts.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-01.110 Effective Date.

This Title shall become effective immediately upon enactment.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

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Chapter 2 – Tribal Utility Authority

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Legislative History

Enacted:

Codifying Title 11, Ord. 195 (11/5/03), BIA (11/25/03).

Repealed or Superseded:

Amendment to Utility Ordinance, Ord. 123 (5/12/97) (adding new sections to Art. XVII, "Violations of Ordinance").
Amendment to Utiltiy Ordinance, Ord. 121 (9/10/96), BIA (10/20/96) (promulgating additional enforcement measures to ensure timely payments of assessments).
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Amending Ordinance No. 65, Utility Ordinance, Ord. 106 (7/12/94) (amending provision for collection of assessments).

Amending Ordinance No. 65, Utility Ordinance, Ord. 105 (6/22/94), BIA (6/29/94) (amending provisions regarding the final roll and the appeal of assessments).

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Resolution to Adopt "Legislative Findings" as Appendix No. 1 to Utility Ordinance No. 65, Enacting Res. 89-12-97 (12/5/89).

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Utility and Environmental Service Ordinance, Ord. 51, Enacting Res. 85-6-41 (06/04/85), BIA (7/10/85).

Setting New Water Rates for the Swinomish Tribal Community Water System, Res. 81-4-824 (4/14/81).

Rescinded:

Ord. 73 (7/19/90), BIA (disapproved).

[Ed. Note. Ord. 109 is signed, but not dated, by BIA Puget Sound Agency Superintendent Bill Black. The substantive provisions of Amendment to Tribal Utility Ordinance Relating to Appeals of Assessments, Res. 94-4-34 (4/26/94), are identical to the substantive provisions of Ord. 105. Tribal archives do not contain a copy of Ord. 73. Ord. 65 was originally numbered Ord. 62.]

Subchapter I – Establishment

11-02.010 Utility Authority.

There is hereby established the Swinomish Indian Tribal Utility Authority (the "Authority"), which shall have authority to provide utility services to all of the lands and waters within the exterior boundaries of the Reservation. The Authority shall have the day-to-day responsibility for operating, providing, and maintaining the tribal utilities.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11.02.020 Services.

(A) The services provided by the Authority shall include water, sewage, and solid waste. Additional services may be provided upon approval by the Senate.

(B) The Authority shall provide safe, adequate water for a fee to any person connected to the Authority water supply system; provided, that water services may be terminated as provided in Sections 11-02.480 through 11-02.490. The Authority shall control, regulate and manage such system or systems, promulgating all rules and regulations as are approved and deemed necessary by the Commission to carry out the goals and objectives of this Chapter.

[History] Ord. 195 (11/5/03); Ord. 121 (9/10/96); Ord. 65 (10/10/89).

11-02.030 Utility Commission.

There is hereby established the Swinomish Indian Tribal Utility Commission (the "Commission") to serve as the advisory and policy setting board of directors for the Swinomish Indian Tribal Community Utility Authority. Unless specified otherwise in this Title, the Commission shall have the authority to establish rules and regulations regarding the acceptance of, and subscription to, tribally provided utility services.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.040 Subordinate to the Senate.

Generally, the Senate shall have full plenary authority over the Commission. The Commission shall operate as a subordinate unit of the Senate, independent in its operation, but responsible to the Senate for its actions.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.050 Operations.

The methods of appointment, terms of office, and operating procedures of the Commission shall be set forth in this Title and in regulations adopted by the Commission.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.060 Powers and Responsibilities.

The Commission shall provide direction and overall responsibility for the Authority and its projects. To fulfill these responsibilities, the Commission shall have the power to:

(A) Adopt an annual budget for the maintenance and operation of the Authority;

(B) Establish policies and procedures for the administration of the Authority;

(C) Determine and set reasonable fees for utility services;

(D) Provide procedures for the hiring and compensation of management and maintenance personnel;

(E) Adopt appropriate regulations to implement the requirements of this Chapter;

(F) Authorize investment of Authority funds;

(G) Establish and maintain for the Authority a commercial bank account;

(H) Initiate improvement projects;

(I) Recommend to the Senate the sale and issuance of bonds, warrants, notes or the incurrence of other obligations to finance the Tribe's public utilities; and

(J) Implement additional services and perform additional tasks at the direction of the Senate.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.070 Membership.

The Commission shall be composed of five (5) persons appointed by the Senate. At least three (3) of the five (5) members shall be appointed from among the on-reservation users of the Tribe's public utilities. At least one (1) of the five (5) members shall be appointed from among members of the Senate.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.080 Terms of Office.

(A) Commissioners will serve staggered two-year terms, except for the representative from the Senate who shall serve a one-year term. Commission appointments shall be made by the Senate during the month of March of each year and Commission terms shall expire upon the swearing in of newly appointed Commissioners.

(B) Commission position No. 1 shall be held by a Senate member and shall be appointed each year to serve one-year terms. Commission position Nos. 2 and 4 shall be appointed during even numbered years to serve two-year terms. Commission position Nos. 3 and 5 shall be appointed during odd numbered years to serve two-year terms.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.090 Method of Appointment.

The Senate shall annually appoint persons to fill any Commission vacancies. The Authority shall advertise the vacancies. The Commission shall forward to the Senate Chair the names of all candidates interested in serving, together with the Commission's recommendations for appointment. For all Commissioner positions, the Senate shall choose persons capable and willing to perform the duties of the Commission. After receiving names of candidates and recommendations, the Senate shall appoint Commissioners by a majority vote.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.100 Vacancies.

(A) **Senate Commissioner.** In the event that the Commissioner from the Senate loses or resigns his or her position in the Senate, his or her appointment to the Commission shall expire immediately, and the Senate shall fill the vacancy by appointing a new Commissioner at the next regular meeting of the Senate.

(B) **Commissioners at Large.**

(1) If a Commissioner from the public at large resigns, moves from the local area, or dies, the Senate shall declare the Commissioner position vacant.

(2) If a Commissioner is found guilty of a felony or major crime in any court of law, the Senate may declare the position vacant.

(3) If any Commissioner misses two (2) consecutive Commission meetings without a valid excuse, the Commission may declare the position vacant.

(4) All vacancies should be filled within one (1) month, or as soon as possible thereafter, in accordance with this Chapter.

(C) **Unexpired Terms.** All appointments to fill unexpired terms shall be for the remainder of that unexpired term.

(D) **Senate as Interim Commission.** If the number vacancies on the Commission prevents a quorum, the Senate shall act as the interim Commission until the Senate fills enough vacancies to achieve a quorum.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.110 Officers.

(A) **Elections**. Officers of the Commission shall be elected by the Commissioners annually following the annual appointment or reappointment of Commissioners by the Senate.

(B) **Duties**. Officers shall have the following duties:

(1) **Chair.** The Chair shall preside at all meetings; call and arrange all meetings; oversee the general management of the Authority's affairs; and perform all duties incidental to the office.

(2) **Vice-Chair.** The Vice Chair shall perform all of the Chair's duties in the absence of the Chair; and shall assist the Chair as required in handling the Authority's affairs.

(3) **Secretary Treasurer.** The Secretary Treasurer shall keep or cause to be kept a complete and accurate record of all meetings; and shall maintain all correspondence, notices and records of the Authority; shall report the Authority's financial status at each regularly scheduled Commission meeting; and shall present to the Commissioners for their action all requests for funds not included in the annual budget; and shall ensure that an annual financial statement is prepared and submitted to the Senate.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.120 Meetings.

(A) **Schedule.** The Commission shall meet when business demands and requires attention, but in no case less than once per month. Regular and special meetings shall be called by the Chair. Any three (3) Commissioners may request in writing that the Chair schedule a special meeting of the Commission. If the Chair fails to schedule a meeting within five (5) days after receipt of a written request, any other three (3) Commissioners may call such a meeting pursuant to the procedures set forth below.

(B) **Notice and Opportunity to Be Heard.** Meetings shall be held in public places, and the Utility Commission shall provide at least five (5) days public notice of Commission meetings. Emergency meetings may be convened with less than five (5) days notice, in cases of emergency where loss of life, limb or property is threatened, or where the continued operation or economic viability of the Tribal public utilities may be in jeopardy. All meetings shall be open to members of the Tribal Community and to users of the Tribe's public utilities.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.130 Quorum and Voting.

(A) **Quorom.** A minimum of three (3) Commissioners is required to establish a quorum and conduct Commission business.

(B) **Voting.** Any action taken by the Commission must be approved by a majority vote of those Commissioners present at a Commission meeting. Each Commissioner of the Commission shall be entitled to vote on each matter coming properly before the Commission at which a quorum is present, except the Chair, who shall vote only in the case of a tie.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.140 Meeting Agenda.

Regular meetings of the Utility Commission shall be conducted according to the following agenda outline:

(A) Call to Order;

(B) Roll call;

(C) Reading of minutes of previous meeting;

(D) Report by Treasurer;

(E) Report by Manager;

(F) Unfinished business;

(G) New business;

(H) Miscellaneous business;

(I) Adjournment;

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.150 Compensation.

Commissioners shall serve without monetary compensation. However, Commissioners shall receive prevailing government rates for mileage, per diem, or other costs incurred while on approved Commission business, consistent with Tribal policy, and subject to the availability of funds within the Authority budget.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

Subchapter II – Management and Finances

11-02.160 Management Personnel.

The Commission shall oversee the business and operating affairs of the Authority. The Commission shall provide for hiring and contracting personnel for the operation and management of the Authority, and shall establish compensation rates consistent with its approved budget. The Commission may delegate only those duties that are not specifically designated as duties to be performed exclusively by the Commission.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.170 Annual Budget.

(A) The Commission shall establish an annual budget enumerating the necessary costs of the Authority including operation, maintenance, administration of capital

improvements, debt service, personnel, liability and other insurance, replacement, a reserve for major repairs and replacements, and lease payments for use of Tribal Community resources and facilities.

(B) The Commission's annual budget shall be presented to the Senate for its approval prior to the commencement of the Commission's fiscal year.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.180 User Rate and Fee Schedule.

The annual budget shall be used to determine a rate and fee schedule to be charged to the users of public utilities. The budget and fee schedule shall be approved by the Commission prior to implementation.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.190 Fiscal Year.

The fiscal year of the Authority shall be the same as the fiscal year of the Senate.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.200 Depository.

The depository of the Authority shall be a separate commercial account or accounts in any bank or banks selected by the Commission. Said account shall be in the name "Swinomish Indian Tribal Utility Authority." Said accounts shall be fully insured by an agency of the United States Government.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.210 Investments.

Funds that are not needed for immediate use or that represent the proceeds of bonds or notes issued to finance a long-term construction project shall be invested in:

(A) A federally insured commercial bank or savings and loan association;

(B) Bonds, notes or other securities constituting direct and general obligations of the United States;

(C) Bonds, notes or other securities constituting the direct and general obligation of any instrumentality of the United States; or

(D) Bonds, notes, letters of credit, or other securities or evidence of

indebtedness constituting the direct and general obligation of a federal home loan bank or federal reserve bank.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.220 Disbursements and Receipts.

(A) The Commission shall determine the distribution of funds required for the operation, maintenance and management of the public utilities through the adoption of an annual budget. No disbursement of Commission funds shall be made except pursuant to an approved budget.

(B) Disbursements will be made by check upon presentation of invoices or vouchers. Disbursements shall be made by individuals properly designated by the Commission.

(C) All cash payments and cash received will be promptly and directly deposited in the depository. Receipts will be issued for all cash received and copies filed and retained for accounting.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.230 Records and Accounts.

(A) Financial records shall be maintained for all expenditures, receipts from payments for services, investments, and returns on investments, and any other financial matters necessary for operation of the Authority.

(B) All accounting records for the Authority shall be maintained in accordance with generally accepted accounting principles and in a manner satisfactory to the Senate.

(C) The records of accounts shall be made available to the Senate upon request.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.240 Exclusive Use of Funds.

The funds accrued by the Authority and kept on deposit are for the exclusive use of the Authority for the necessary operation, maintenance, and management of the Tribe's public utility. Authority funds shall not be transferred or loaned to the Tribal Community General Fund or any other accounts of the Tribe or other Tribal Community departments, except to pay for services provided to the Authority by other Tribal Community departments.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.250 Audits and Reports.

(A) The accounts of the Authority shall be audited annually at the close of the fiscal year at the expense of the Authority.

(B) Annual and periodic reports shall be submitted by the Commission to the Senate.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.260 Bonding.

Officers of the Commission and any other person(s) designated to handle funds for the Authority shall be bonded for amounts not less than $100,000 per person.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.270 Insurance.

Fire and other insurance on property owned or used by the Authority or on property in which the Authority has an insurable interest shall be provided by the Authority in amounts and type of coverage sufficient to cover the cost of full replacement. Insurance may be part of the Tribal Community insurance policies, with the expenses thereof pro-rated to the Authority if so directed by the Senate.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.280 Petty Cash.

A petty cash fund is authorized to be established in an amount of up to two hundred dollars ($200.00). This fund may be used to pay small expenses, when necessary, and to pay small obligations when it is not feasible to pay by check drawn on the official depository. The fund may be reimbursed periodically from the official depository of the Authority in an amount equal to and upon submittal of receipts, vouchers, and statements of the proof of expenditure.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.290 Power to Acquire Property Rights.

The Authority may acquire by purchase all lands, property rights, water, and water rights, both within and without the exterior boundaries of the Reservation necessary for its purposes provided:

(A) Title to all such property so acquired shall be taken in the name of the United States for the use and benefit of the Tribe in the case of real property and in the name of the Tribe in the case of other property; and

(B) No real property shall be acquired without permission of the Senate. The Authority may lease real or personal property necessary for its purposes for a term of years when such leased property may reasonably be needed, where such property may not be needed permanently, or where such a lease may effect substantial savings to the Authority.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

Subchapter III – Terms of Service

11-02.300 Eligibility.

(A) Properties, either inside or outside the exterior boundaries of the Reservation, may receive services of the Authority when the owner thereof agrees to the following terms:

(1) The property owner warrants that he or she is the owner, assignee, lessee, or tenant of the property to receive the utility services and has full authority to bind the property to the terms, regulations, assessments, and rate structure of the Authority as may be amended from time to time.

(2) The property receiving services shall be subject to liens, penalties and interest for non-payment of utility service charges and assessments to the same extent as any other property served by the Authority. Such liens, penalties, and interest shall constitute a charge against that property and a covenant running with the land and shall bind the property and all future owners thereof.

(3) The Authority may cease water or sewer services if the user is delinquent in payments of operation and maintenance charges or has no legal right to occupy the property, as provided in Section 11-02.480(D), or if an owner is delinquent in the payment of assessments, as provided in Section 11-02.480(B) or Section 11-02.480(C).

(B) The Authority reserves the right to require a property owner to execute a contract for water or sewer services where the property owner may have unique or unusual needs.

[History] Ord. 195 (11/5/03); Ord. 121 (9/10/96); Ord. 65 (10/10/89).

11-02.310 Terms.

(A) **Full Payment.**

(1) Before the property receives service, the property owner shall pay to the Authority such connection and other charges as provided by this Title or by contract entered into under the terms of this Title. The property owner must

pay the charge in full before connecting to the public sewers or water supply systems of the Authority.

(2) Any such arrangement shall also provide for interest to be collected upon the unpaid balance of the charges at a rate of one percent (1%) per month upon the unpaid balance compounded annually. Failure to complete payment of the connection charges shall become a lien against the property.

(B) **Performance in Lieu of Payment.** Instead of any charge, the Authority, at the discretion of the Commission, may accept from the property owner a sewer or water pipeline of sufficient value installed in an easement or public right-of-way, or some other performance reflecting value approximating the charge.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.320 Developers' or Owners' Contracts.

The Authority may also enter into contracts with developers or owners of real estate for construction of sewer or water facilities by such developers and include such terms and conditions as the Commission deems proper.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

Subchapter IV – Charges and Fees

11-02.330 Charges and Fees.

The Commission shall recommend, and the Senate shall approve, permit fees, connection charges, service charges, and other fees by resolution on an annual basis in a manner consistent with all federal statutes and regulations.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.340 Billings and Delinquent Charges.

The Commission may, from time to time, fix billings and delinquency charges by resolution.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.350 Uniform Rate Schedule.

(A) **No Distinctions within Classes.** The Commission shall provide for revenues by fixing rates and charges for the furnishing of utility service to those to whom such service is available. Such rates and charges are to be fixed as deemed necessary by the Commission, so that uniform charges will be made for the same class of customer

or service. No distinction in rates and charges shall be made on the basis of race, color, creed, religion, or tribal membership of the owner of the property served.

(B) **Classification.** In classifying customers served or service furnished by the Authority, the Commission may in its discretion consider any or all of the following factors:

(1) The difference in the cost of maintenance, operation, repair, and replacement of various parts of the system;

(2) The different character of service furnished various customers;

(3) The quantity and quality of sewage or solid waste delivered, or water consumed, by the customer and its time of delivery;

(4) Capital contributions made to the system, including but not limited to assessments; and

(5) Any other matters that present a reasonable difference as a grounds for distinction.

(C) **Cost Recovery.**

(1) Such rates are to be paid on a monthly basis and shall produce revenues sufficient to pay in a timely manner the costs of maintenance and operation, the principal of, interest on, premium, if any, of issuance of any indebtedness of the Authority or the Tribe's utility systems, including, without limitation, assessment bonds, revenue bonds, lease-purchase obligations, warrants, notes, and all other charges necessary for efficient and proper operation of the system.

(2) Rates and charges shall be set by resolution of the Commission with the approval of the Senate.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.360 Connection Fees.

(A) **Commission Shall Set.** The Commission, with the approval of the Senate, shall provide by resolution for connection fees. Connection fees shall produce revenues sufficient to pay in a timely manner the outstanding obligations or indebtedness of the Authority or Tribe at the time of initial commencement of operations by the Authority, one time costs incurred by the Authority or Tribe in commencing operations, and such other expenses of the Authority as are necessary including a reserve for depreciation of the system.

(B) **No Discrimination.** No distinction in connection fees shall be made on the basis of race, color, creed, religion or tribal membership of the owner or occupier of the property served.

(C) **Classification Scheme.** In classifying customers for connection fees, the Commission may consider any or all of the following factors:

(1) Difference in cost of construction;

(2) Amortization and depreciation schedules for the portions of the system serving that property;

(3) Capital contributions made to the system or portions thereof by the owners of surrounding property; and

(4) Any other matters that present a reasonable difference, or grounds for distinction, in connection fees.

(D) **Latecomer's Schedule.** The Commission may provide for additional connection fees based upon a "latecomer's" schedule, under which fees are collected to reimburse a developer or the Authority for the construction of a specific portion of the system specially benefiting the property connecting to the system.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.370 Nature of Obligation.

The fees and charges of the Authority, whether for service available or delivered, for the privilege of connection to the system, or to defray the costs of construction or repair of the system, shall be a lien against the benefited property, and shall also be a joint and several personal obligation of the record owners of the property on the date the service is provided or billed.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.380 Collection of Fees and Charges.

(A) The Authority may collect its fees and charges by foreclosing its lien and by proceeding against any or all of the persons, corporations or other entities personally liable, but when it shall have satisfied any judgment, it shall enter a satisfaction of judgment and thereby release the remaining defendants, if any, to the extent of such satisfaction.

(B) Any remedy used by the Authority to collect any funds owed it shall be applicable to all users within a class of users, without regard to the race, color, creed, religion, or

tribal membership of the owner, provided that, lessees or occupiers of tribal land shall be deemed a separate class of users for the purposes of this Section only.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

Subchapter V – Enforcement

11-02.390 Entry On Property.

(A) **Entry Permitted.** The manager and other duly authorized employees or representatives of the Authority bearing proper credentials and identification shall be permitted to enter upon all properties for the purpose of inspection, observation, measurement, sampling and testing in accordance with the provisions of this Title.

(B) **Willful Obstruction.**

(1) Any person who willfully obstructs or prevents an Authority employee or representative from entering or remaining upon property for a lawful purpose under this Title shall be subject to a penalty in accordance with Sections 11-02.440 through 11-02.460 of this Title for each such incident.

(2) Any person who willfully obstructs or prevents an Authority employee or representative from entering or remaining upon property for a lawful purpose under this Title shall be liable to the Authority in a civil action for all damages, costs and attorneys fees whether at trial or on appeal suffered by the Authority as a result of the obstruction.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.400 Meters.

(A) **Property of the Authority.** All meters for the measurement of utility services shall be installed in accordance with the requirements of the Authority in such locations as the manager shall direct. All such meters shall be the property of the Authority and shall be maintained by it. All meters shall remain accessible to Authority personnel and no person shall obstruct or tamper with any meter.

(B) **Penalties.**

(1) Any person obstructing or tampering with any meter shall be in violation of this Title and subject the violator to actual damages and civil penalties under Sections 11-02.440 through 11-02.460 of this Title for each such incident.

(2) The owner of the property on which the meter is located shall be responsible for all damage or tampering with such meter.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.410 Unauthorized Services.

No person shall obtain utility services from the Authority facilities without authorization. Any person who obtains such unauthorized service by connecting to the Authority facilities without authorization or by bypassing or tampering with any meter shall be liable to the Authority for three (3) times the value of the actual service obtained in addition to the costs of correction.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.420 Manager's Authority.

The manager shall be the administrator of the Authority. All instructions and decisions he or she makes shall be final, but appeals from such instructions or decisions may be made to the Commission in writing at any regular meeting of the Commission.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.430 Liability to Authority.

Any person who violates any provision of this Title shall be liable to the Authority for any expense, loss, damage, cost of inspection, or cost of correction incurred by the Authority by reason of such violation, including any expenses incurred by the Authority in collecting from such person for such loss, expenses, cost of inspection or cost of correction.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.440 Notice Of Violation.

(A) The Authority shall serve or mail written notice to any person found to be violating any provision of this Title. The notice shall state the nature of the violation and provide a reasonable time limit for the satisfactory correction thereof.

(B) The offender shall, within the period of time stated in such notice, permanently cease all violations and make all necessary corrections.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.450 Costs of Correction.

(A) **Order of Correction.** The Authority, through its manager, shall be empowered to order the correction of violations of this Title and charge the costs of this correction, plus a fee of the lesser of one hundred dollars ($100.00) or ten percent (10%) of the actual costs of correction, to the owner of the property upon which the violation occurs.

(B) **Appeal.** The order of the manager may be appealed to the Commission. The order of the Commission may be stayed by application to the Swinomish Tribal Court and the contemporaneous filing of a bond indemnifying the Commission as obligee for twice the estimated cost of the correction.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.460 Civil Penalty.

(A) Any person who continues to violate this Title beyond the time limit for correction specified in the notice shall be liable for a civil penalty of not less than one hundred dollars ($100.00) per day for each such day after the expiration of the time limit stated in the notice.

(B) This penalty shall be assessed by the Tribal Court upon the filing of a complaint by the Authority.

(C) The proceeds of the civil penalty, less the costs of the filing and other court costs, shall be placed in the general fund of the Authority.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.470 Notice to Connect.

The service of a Notice to Connect upon an owner, whether for connection to the system prior to its initial operation or connection to the system at a later time, shall be deemed a notice of violation of this Title.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.480 Cessation of Water Services.

The Authority, through its manager, may order the cessation of water services to a user under the following circumstances:

(A) If the user is two (2) or more months delinquent in payment of water or sewer monthly operation and maintenance charges;

(B) If the "owner" as defined in this Chapter is three (3) or more months delinquent in payment of water or sewer assessment charges that are billed on a monthly basis;

(C) If the "owner" as defined in this Chapter is two (2) or more periods delinquent in payment of water or sewer assessment charges that billed on the basis of a period longer than a month; or

(D) If the Authority is notified by sworn affidavit that cessation of water service is requested because the user has no legal right to occupy the property, and the affidavit establishes that:

(1) The person who executed the affidavit is an owner of the property or a legal representative of the owner or, in the case of land held in trust by the United States, is an official of the Bureau of Indian Affairs or the Realty Office of the Tribe; and

(2) No underlying lease has been entered into authorizing the user (or a person from whom the user received a sublease) to occupy the property; or

(3) An underlying lease authorizing the user (or a person from whom the user received a sublease) to occupy the property has expired naturally and has not been renewed; or

(4) The underlying lease authorizing the user (or a person from whom the user received a sublease) to occupy the property has been canceled and, in the case of land held in trust by the United States, such cancellation is final for the Department of the Interior; and

(5) Notice was given to the user that such an affidavit seeking cessation of water service would be filed with the Authority. Such notice shall set forth the grounds on which cessation of water service is sought. For purposes of this Subsection, such notice shall be deemed to have been given if it is both mailed to the user's utility billing address by first class U.S. Mail, and posted on the property, at least ten (10) days prior to the affidavit being filed with the Authority.

[History] Ord. 195 (11/5/03); Ord. 121 (9/10/96).

11-02.490 Procedures for Cessation of Water Services.

(A) Following are the exclusive procedures for ceasing water services to a user for the grounds set out in Section 11-02.480.

(1) At least fifteen (15) days prior to cessation of water service, the manager shall notify the user by both causing to be mailed to the user's billing address, and by causing to be posted on the property, a notice setting forth the name of

user, the reason for cessation of water services, and the date on or after which water service will cease.

(2) If the grounds for cessation of water services are delinquency in the payment of assessments or monthly operation and maintenance charges, as set out in Subsections 11-02.480(A) – (C) the notice shall also:

(a) Set forth the date and time by which, and the place at which, payment must be made in order to prevent cessation of service, which date shall not be less than fourteen (14) days from the date of mailing and posting of the notice; and

(b) Include an itemized bill that shows the full amount that must be paid in order to prevent cessation of water service, including any interest, fees, costs, and penalties authorized by this Title.

(B) The filing of an appeal authorized by this Title shall not stay the manager's decision to cease water delivery to a user.

[History] Ord. 195 (11/5/03); Ord. 121 (9/10/96); Ord. 65 (10/10/89).

11-02.500 Reconnection After Cessation of Water Services.

(A) Water services ceased pursuant to Section 11-02.490 may be resumed when the grounds for cessation set forth in Section 11-02.480 no longer exist.

(B) The owner shall pay a reconnection fee, as established by the Commission in an amount sufficient to fully reimburse all costs related to the cessation and resumption of water services, prior to the resumption of water services.

[History] Ord. 195 (11/5/03); Ord. 121 (9/10/96); Ord. 65 (10/10/89).

11-02.510 Providing Unauthorized Water Service.

(A) It is a violation of this Chapter to provide unauthorized water service.

(B) Unauthorized water service is provided whenever the plumbing on a property receiving water service pursuant to this Chapter is connected, by hose, pipe, tubing, or otherwise, to the plumbing on a property not authorized to receive service pursuant to this Chapter, including any property whose water service has been ceased or suspended.

(C) Whenever an employee or official of the Authority observes unauthorized water service being provided, the Authority shall:

(1) Disconnect, and, when practicable, seize the hose, pipe, tubing, or other

connection providing unauthorized water service;

(2) Post a notice on the property providing the unauthorized water service stating that a violation of this Section has been observed, the unauthorized connection has been disconnected (and, when applicable, seized), and water service is being immediately suspended to the property providing the unauthorized water service. The notice shall also state the steps that must be taken to resume the suspended water service; and.

(3) Immediately suspend the water service to the property providing the unauthorized water service.

(D) Water service suspended pursuant to this Section shall be resumed no sooner than the next regular business day after the day service is suspended, and shall be resumed only after:

(1) A service charge, as set by the Commission to defray the full cost of suspension and resumption of service, has been paid in full; and

(2) An additional enforcement fee has been paid in full. The enforcement fee shall be Fifty Dollars ($50.00) for the first violation of this Section. For the second or subsequent violation of this Section the enforcement fee shall be Two Hundred Fifty Dollars ($250).

[History] Ord. 195 (11/5/03); Ord. 123 (5/12/97).

11-02.520 Unauthorized Resumption of Water Service.

(A) In addition to any civil or criminal penalties that may apply to obtaining unauthorized water service, this Section shall apply whenever water service has been ceased or suspended pursuant to the terms of this Title and any rules or regulations promulgated hereunder, and such service is resumed by any method, except as authorized by the terms of this Title and any rules or regulations promulgated hereunder and performed by an employee or official of the Authority.

(B) Whenever any employee or official of the Authority observes any unauthorized resumption of water service:

(1) The mechanism used to perform the unauthorized resumption of water service shall be removed and, when practicable, seized, or otherwise rendered ineffective by any necessary means, and water service shall immediately again be ceased or suspended without further notice.

(2) After an unauthorized resumption of water service has been observed and corrected, authorized water service shall not be resumed until, in addition to

any other actions or payments required as a precondition for resumption of water service:

(a) A service charge, as set by the Commission to defray the full cost of removing or rendering ineffective the mechanism used to perform the unauthorized resumption of water service, has been paid in full, and

(b) An additional enforcement fee has been paid in full. The enforcement fee shall be fifty dollars ($50.00) for the first violation of this Section. For the second or subsequent violation of this Section, the enforcement fee shall be two hundred fifty Dollars ($250.00).

[History] Ord. 195 (11/5/03); Ord. 123 (5/12/97).

Article VI – Judicial and Administrative Review

11-02.530 Dispute Resolution.

Any disputes regarding the right to use the utility services of the Authority, refusal or failure to provide service, operational problems affecting service, and other service-related issues shall be resolved according to this Subchapter.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.540 Commission Review.

(A) Any person aggrieved by an order or decision of the Authority shall first petition the Commission for a hearing. This petition shall be in writing, although the Authority may waive this requirement.

(B) The hearing shall be on the record and the Commission shall cause a verbatim record of the hearing to be kept and transcribed.

(C) The Commission shall issue a written decision, which shall become a part of the written record and shall be open for inspection at the offices of the Authority during regular working hours.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.550 Senate Review.

(A) The decision of the Commission shall be reviewable by the Senate. Any person who desires any review of the Commission decision shall petition the Senate for such review within ten (10) working days of the date of the Commission decision. The review power of the Senate shall be limited to ascertaining whether a fair hearing upon the dispute was held.

(B) The Senate shall take up the review within thirty (30) calendar days of the date of the receipt of the petition for review. Failure of the Senate to act within this period shall be an affirmation of the Commission decision.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.560 Judicial Review.

(A) Any party dissatisfied with the decision of the Senate may petition the Swinomish Tribal Court for judicial review of the decision.

(B) For the purposes of this review, the Senate agrees not to raise as a defense to the appeal any immunity from this type of action that it or the Tribe may possess in Tribal Court.

(C) The petition for review shall be filed within ten (10) working days of the date of the decision of the Senate, or within forty (40) calendar days of the date of the petition for review to the Senate.

(D) The Tribal Court shall conduct a review upon the written record, and shall permit time for each party to present oral argument in support of this position. The standard used in this review shall be whether there was substantial evidence in the record to support the decision of the Commission. The Tribal Court shall issue a written decision, which shall be final.

[History] Ord. 195 (11/5/03); Ord. 109 (2/7/95); Ord. 65 (10/10/89).

11-02.570 Appeal of Assessments.

(A) **Limited Procedures.** Appeals of assessments are limited to the procedures described in this Section.

(B) **Petition for Review.** An owner entitled to appeal the final assessment roll must file a petition for review with the Tribal Court within ten (10) days of the date of publication of the Senate's confirmation of the final assessment roll in a local newspaper of suitable size and general circulation. The appeal shall describe the property and the appellant's objections to the assessment.

(C) **Bond.** The owner must simultaneously execute and file a bond with the Tribal Court, subject to the following conditions:

(1) The sum shall be ten percent (10%) of the assessed amount, with at least two sureties approved by the Court.

(2) The bond shall be forfeited if the owner does not prosecute the appeal without delay.

(3) If the appeal is unsuccessful, the owner must pay all reasonable costs and expenses the Tribe incurred litigating the appeal.

(4) Upon application, the Tribal Court may order the appellant to execute and file such additional bonds as are reasonably necessary to protect the interests of the Tribe.

(D) **No Jury.** The Tribal Court shall hear and determine the appeal without a jury.

(E) **Priority**. The cause of action shall have priority over all other civil causes of action.

(F) **Standard of Review.** The Tribal Court shall confirm the assessment and presume that the Senate's action was legal, proper, and procedurally correct, unless it finds from the record that the assessment is founded upon a fundamentally wrong basis and/or the decision of the Senate was arbitrary and capricious; in which event the Tribal Court's judgment shall correct, modify, or annul the assessment insofar as it affects the appellant's property. The Tribal Court's review is solely based on the record presented during the hearing held pursuant to Section 11-02.550, and is not de novo.

(G) **Finality.** The decision of the Tribal Court shall be final.

[History] Ord. 195 (11/5/03); Ord. 105 (6/22/94).

11-02.580 Costs.

(A) As a condition of appealing or petitioning in any of the above steps, the party wishing to file the appeal or petition shall first pay all costs of the previous step from which the appeal or petition is sought.

(B) Costs shall include, but not be limited to, the preparation of the written transcript of each hearing or meeting, reasonable filing fees, and other costs, provided that these costs shall not include attorney's or spokesman's fees for any of the above stages of proceeding.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.590 Minor Disputes.

Operational problems or complaints of a minor nature may, at the option of the complaining party, be resolved informally through contact with the manager or staff of the Authority. The use or nonuse of these informal proceedings shall not affect a complaining party's right to appeal as set out in this Subchapter.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.600 Other Appeals.

(A) Any other decisions of the Commission or Senate, including rate setting and class of service decisions, may be reviewed in the Tribal Court by filing an appeal therein within ten (10) working days of the date at which the decision of the Commission or Senate was taken.

(B) The procedures and rules of the Tribal Court governing civil actions shall be applicable to such an appeal, and the decision of the Tribal Court shall be final.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

Title 11 – Utilities
Chapter 3 – Reservation Utility Improvement Districts

Sec.

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Legislative History

Enacted:

Codifying Title 11, Ord. 195 (11/5/03), BIA (11/25/03).

Repealed or Superseded:

Amendment to Utiltiy Ordinance, Ord. 121 (9/10/96), BIA (10/20/96) (promulgating additional enforcement measures to ensure timely payments of assessments).
Amendment to Utility Ordinance, Ord. 108 (1/10/95), BIA (2/2/95) (clarifying meaning of amendment 106).
Amending Ordinance No. 65, Utility Ordinance, Ord. 106 (7/12/94) (amending provision for collection of assessments).

Amending Ordinance No. 65, Utility Ordinance, Ord. 105 (6/22/94), BIA (6/29/94) (amending provisions regarding the final roll and the appeal of assessments).
Amendment to Ordinance 65, Ord. 67 (12/5/89), BIA (9/24/90) (amending the provision for an assessment lien).
Resolution to Adopt "Legislative Findings" as Appendix No. 1 to Utility Ordinance No. 65, Enacting Res. 89-12-97 (12/5/89).
Swinomish Indian Tribal Community Utility Ordinance, Ord. 65 (10/10/89), Enacting Res. 89-10-95, BIA (10/23/89) (repealing and superseding Ord. 51).Utility and Environmental Service Ordinance, Ord. 51, Enacting Res. 85-6-41 (06/04/85), BIA (7/10/85).
Setting New Water Rates for the Swinomish Tribal Community Water System, Res. 81-4-824 (4/14/81).

Rescinded:

Ord. 73 (7/19/90), BIA (disapproved).

[Ed. Note. Ord. 109 is signed, but not dated, by BIA Puget Sound Agency Superintendent Bill Black. The substantive provisions of Amendment to Tribal Utility Ordinance Relating to Appeals of Assessments, Res. 94-4-34 (4/26/94), are identical to the substantive provisions of Ord. 105. Tribal records do not contain an official copy of Ord. 73. Ord. 65 was originally numbered Ord. 62.]

Subchapter I – Establishment

11-03.010 Authorization.

(A) **Establishment.** The Senate shall have the power to establish Reservation Utility Improvement Districts ("RUIDs") within the exterior boundaries of the Reservation, and to levy special assessments under a method of regular installments extending over a period not to exceed thirty (30) years on all property specially benefited by any utility improvement on the basis of any special benefits to pay in whole or in part the costs of any improvements ordered within the jurisdiction of the Authority.

(B) **Procedures.** The procedures for the levying, collection, and enforcement of all public assessments and the sale and issuance of bonds, warrants, notes, and other obligations to finance the Tribe's public utilities shall be in the manner now and hereafter provided by this Chapter: Provided, however, that in addition to a lien against the property benefiting from any improvement, the costs of such improvement, together with interest and penalties, shall be a joint and several personal obligation of the landowner or owners.

(C) **Assessment.** The method of assessment shall be determined by the Senate by resolution. Assessments in any RUID may be made on the basis of special benefits up to but not in excess of the total of any comprehensive scheme or plan payable by the issuance of bonds, warrants, notes or other obligations incurred to pay the same.

(D) **Collection.** The collection of principal and interest on all assessments in such RUID shall, when collected, be paid into one or more funds or accounts of the Authority. Money in such funds or accounts shall be used to pay the principal of, interest on, and premium, if any, and costs of issuance of the bonds, warrants, notes or other obligations of the Tribe issued to finance the Tribe's public utilities.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.020 Formation.

(A) Senate Resolution. Formation of RUIDs to carry out all or any portion of the comprehensive plan, or additions and betterment thereof, shall be initiated by resolution of the Senate. Such resolution shall state the following:

(1) The Senate's intention to order such improvements;

(2) The nature and territorial extent of such proposed improvement;

(3) The number of the proposed RUID;

(4) The boundaries of the proposed RUID;

(5) The estimated cost and expense of the improvement;

(6) The proportionate amount thereof that will be borne by the property within the proposed district; and

(7) The date, time and place for a public hearing on the formation of the proposed RUID, which date shall, unless there is an emergency, be no less than twenty (20) days and no more than sixty (60) days from the date the resolution of intention was adopted.

(B) **Notice.**

(1) **By Newspaper.** Notice of the adoption of the resolution of intention shall be published in at least two (2) consecutive issues of a local newspaper of suitable size and general circulation in the proposed RUID, the date of the first publication to be at least ten (10) days prior to the date fixed by such resolution for the public hearing.

(2) **By Mail.** Notice of the adoption of the resolution of intention shall also be given to each owner or reputed owner of any lot, tract, parcel of land, or other property within the proposed RUID by mailing said notice at least ten (10) days before the date fixed for the public hearing to the owner or reputed

owner of the property as shown by records of the Tribe, on the tax rolls of the Skagit County Treasurer at the address shown thereon, or by the records of the Bureau of Indian Affairs.

(3) **Contents.** The notices shall refer to the resolution of intention and designate the proposed RUID by number. Said notice shall also state that all persons desiring to comment on the formation of the RUID may do so in writing before the time fixed for said public hearing.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.030 Hearing.

The Senate or its designee shall conduct a public hearing at the time and place designated in the notice to property owners. At this hearing comments shall be heard from any person affected by the formation of the RUID. Such hearing may be continued from time to time by the Senate or its designee. The boundaries of the RUID may not be changed to include property not previously included in it without the Senate first passing a new resolution of intention and giving a new notice to affected property owners in the manner and form and within the time herein provided for the original notice.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.040 Resolution Ordering Improvement.

(A) **Determination.** After said hearing, the Senate shall determine, based on all information received and/or the recommendation of its designee, whether it would be in the best interests of the Tribe to proceed with any such improvement.

(B) If the Senate finds that the RUID should be formed, it shall by resolution:

(1) Order the improvement;

(2) Direct the preparation of detailed plans for the RUID;

(3) Declare the estimated cost;

(4) Acquire all necessary land;

(5) Secure all necessary financing; and

(6) Direct the Authority to prepare the preliminary assessment roll, proceed with the work and file with the Comptroller its roll levying special assessments in the amount to be paid by special assessment against the property situated

within the RUID in proportion to the special benefits to be derived by the property therein from the improvement.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.050 Notice of Filing Roll.

Before the approval of the final assessment roll, the Authority shall cause to be published a notice once a week for two (2) consecutive weeks in a local newspaper of suitable size and general circulation, stating that the roll is on file and open to inspection in the office of the Authority, and fixing the time, not less than fifteen (15) nor more than thirty (30) days from the date of the first publication of the notice, within which protest must be filed with the Authority against any assessments shown thereon, and fixing a time when a hearing will be held by the Senate or its designee on the protests. The notice shall also be given by mailing at least fifteen (15) days before a hearing, a similar notice to the owners or reputed owners of the land in the district as they appear on the books of the Office of Planning and Community Development, the Treasurer of Skagit County or the Bureau of Indian Affairs.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.060 Hearing to Contest Assessment.

(A) **Power to Modify Assessment.** At a hearing on a protest to an assessment, the Senate or its designee shall have power to correct, revise, raise, lower, change, or modify such roll, or any part thereof, and to set aside such roll, and order that such assessment be reassessed as to such body shall appear equitable and just. Thereafter the Senate by resolution shall approve the same.

(B) **Assessment Raised.** If the Senate decides to raise the assessment, the Authority shall issue a new notice similar to such first one. Final approval of such roll may be made by the Senate.

(C) **Assessment Not Raised.** Whenever any property shall have been entered originally upon such roll and the assessment upon any such property shall not be raised, no objection thereto shall be considered by the Senate, its designee, or any court on appeal unless such objection be made in writing at or prior to the date fixed for the original hearing upon such roll.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.070 Alteration of Boundary Lines.

In the event that any portion of the system after its installation in such RUID is not adequate for the purpose for which it was intended, or that for any reason changes, alterations or betterments are necessary in any portion of the system after its installation, then such district,

with boundaries that may include other service areas, may be created in the same manner as is provided herein for the creation of a Reservation Utility Improvement District.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.080 Final Roll.

(A) **Finality of Assessment Roll.** Whenever any final assessment roll for local improvements shall have been confirmed by the Senate as herein provided, the regularity, validity and correctness of the proceedings relating to such improvement, and to the assessment thereof, including the action of the Senate upon such assessment roll and the confirmation thereof, shall be conclusive in all things upon all parties, and cannot in any manner be contested or questioned in any proceeding whatsoever by any person not filing written objections to such roll in the manner and within the time provided in this Chapter.

(B) **Action to Contest Assessment.** No person may bring any action to defeat or contest any such assessment, or the sale of any property to pay such assessment, or any certificate of delinquency issued therefor, or the foreclosure of any lien issued therefor, except in the manner and under the procedures set forth in this Chapter.

(C) **Sale of Real Estate.** This Section shall not be construed as prohibiting the bringing of injunction proceedings to prevent the sale of any real estate upon the grounds:

(1) That the property about to be sold does not appear upon the assessment roll, or

(2) That said assessment has been paid.

[History] Ord. 195 (11/5/03); Ord. 105 (6/22/94); Ord. 65 (10/10/89).

11-03.090 Segregation of Special Assessment.

(A) **Senate May Segregate.** Whenever any land against which there has been levied any special assessment under this Title shall have been sold in part or subdivided, the Senate shall have the power to order a segregation of the assessment.

(B) **Segregation Procedure.**

(1) **Apply to Authority.** Any person desiring to have such special assessment against a tract of land segregated to apply to smaller parts thereof shall apply to the Authority for such segregation. If the Authority determines that such request for segregation is a reasonable and equitable one under the circumstances, it shall recommend to the Senate that such segregation be made. The segregation shall as nearly as possible be made on the same basis

as the original assessment, and the total of the segregated parts of the assessment shall equal the assessment before segregation.

(2) **Senate Review and Resolution.** If the Senate after review concurs in the recommendation of the Authority, it shall by resolution instruct the manager to make segregation on the original assessment roll as directed in the resolution. The resolution shall describe the original tract, the amount and date of the original assessment, and shall define the boundaries of the divided parts and the amount of assessment chargeable to each part. A certified copy of the resolution shall be delivered to the manager.

(3) **Fee.** The person seeking the segregation shall pay the Authority a predetermined administrative fee for each tract of land into which the segregation is to be made. In addition to such administrative charge, the Authority may require payment of reasonable engineering, clerical, and legal costs incident to making the segregation.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.100 Assessments.

(A) **Collection and Use.** All assessments for local improvements in RUIDs shall be collected by the Authority and deposited with the Comptroller. All assessments shall be kept in a separate fund to be known as "Reservation Utility Improvement Fund District No. ___" and shall be used for no other purpose than to redeem warrants drawn upon and bonds issued against the fund, or to pay for notes or other obligations otherwise incurred pursuant to the comprehensive scheme or plan referred to in Section 11-03.010.

(B) **Notice (Newspaper).** As soon as the Authority delivers the approved assessment roll, it shall cause a notice to be published in a local newspaper of suitable size and general circulation once a week for two (2) consecutive weeks, stating that the roll has been received and that all or any portion of the assessment may be paid within thirty (30) days from the date of the first publication of the notice without penalty, interest or costs.

(C) **Notice (Mail).** Within fifteen (15) days of the first newspaper publication, the Authority shall notify each owner or reputed owner whose name appears on the assessment roll, at the address shown on tribal records or the tax rolls of the county treasurer for each item of property described on the list, of the nature of the assessment, of the amount of his or her real property subject to such assessment, of the total amount of assessment due, and of the time during which such assessment may be paid without penalty, interest, or costs.

[History] Ord. 195 (11/5/03); Ord. 108 (1/10/95); Ord 106 (7/12/94); Ord. 65 (10/10/89).

11-03.110 Installment Payments.

In all cases where bonds are issued to pay the cost and expense of a RUID, the resolution levying the assessments shall provide that the sum charged against any lot, tract, and parcel of land or other property, or any portion thereof, may be paid during the thirty (30) day period allowed for the payment of assessments without penalty or interest and that thereafter the sum remaining unpaid may be paid in equal annual principal installments or in equal annual installments of principal and interest.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.120 Payment, Interest, and Penalties.

(A) The Senate shall prescribe by resolution when assessments or installments thereof shall be paid, and shall provide for the payment and collection of interest thereon at a rate that shall be fixed by the Senate. Assessments or installments thereof, when delinquent, in addition to such interest, shall bear a penalty of not less than five percent (5%) as set by the Senate.

(B) The manager may cease water services, as provided in Sections 11-02.490 and 11-02.500, if an owner is delinquent in payment of his or her assessment charges.

[History] Ord. 195 (11/5/03); Ord. 121 (9/10/96); Ord. 65 (10/10/89).

11-03.130 Payment Within Thirty Days.

The owner of any lot, tract, or parcel of land or other property charged with a RUID assessment may redeem it from all or any portion thereof by paying to the Authority all or any portion thereof without interest within thirty (30) days after the first publication of notice that the assessment roll has been finalized for collection.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.140 Prepayment.

The owner of any lot, tract, or parcel of land or other property charged with a local improvement assessment may redeem it from all liability for the unpaid amount of the assessment at any time after the thirty (30) day period allowed for payment of assessments without penalty or interest by paying the entire balance of the assessment to the Authority with interest thereon to the date of maturity of the installment next falling due.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.150 Assessment Lien.

The charge assessed upon the respective lots, tracts, or parcels of land and other property in the assessment roll established by resolution of the Senate for the purpose of paying the cost and expense in whole or in part of any RUID, shall be a lien, to the maximum extent allowed by law, upon the property assessed from the time the assessment roll has been finalized for collection. Interest and penalties shall be included in and shall be a part of the assessment lien. The assessment lien shall be paramount and superior to any other lien or encumbrance theretofore or thereafter created.

[History] Ord. 195 (11/5/03); Ord 67 (12/5/89); Ord. 65 (10/10/89).

Subchapter II – Foreclosure Procedure

11-03.160 Conditions Precedent to Foreclosure.

If two (2) installments of any RUID assessment are delinquent, or if the final installment thereof has been delinquent for more than one (1) year, the Tribe shall proceed with the foreclosure of the delinquent assessment or delinquent installments thereof by proceedings brought in its own name in Tribal Court.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.170 Foreclosure of Entire Assessment.

(A) When the assessment is payable in installments, the enforcement of the lien of any installment shall not prevent the enforcement of the lien of any subsequent installment.

(B) The failure to pay any installment due shall render the entire assessment due and payable and the collection thereof shall be enforced by foreclosure: Provided, that the payment of all delinquent installments together with interest, penalties, and costs at any time before entry of judgment in foreclosure shall extend the time of payment on the remainder of the assessments as if there had been no delinquency or foreclosure.

(C) Where foreclosure of two (2) installments of the same assessment on any lot, tract, or parcel is sought, the Authority shall cause such lot, tract, or parcel to be dismissed from the action, if the installment first delinquent together with interest, penalties, costs, and charges is paid at any time before sale.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.180 Commencement of Action.

(A) In foreclosing RUID assessment liens, the Tribe shall proceed by filing a complaint in Tribal Court.

(B) It shall be sufficient to allege in the complaint:

(1) The passage of the ordinance authorizing the improvement;

(2) The making of the improvement;

(3) The levying of the assessment; and

(4) The date of delinquency of the installment or installments of the assessment for the enforcement of which the action is brought, and (5) that they have not been paid prior to delinquency or at all.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.190 Form of Summons.

In foreclosing RUID assessments, the summons shall be in substantially the following form:

IN THE SWINOMISH TRIBAL COURT

_____)	Cause No.
)	
Plaintiff,)	
)	
v.)	Summons For Foreclosure
)	Of Reservation Utility
)	Improvement District
_____)	Assessment Lien
)	
Defendant.)	
)	
_____)	

To the Defendant: A lawsuit has been started against you in the above entitled court by the Swinomish Indian Tribal Community, plaintiff. Plaintiff's claim is stated in the written complaint, a copy of which is served upon you with this summons. The purpose of this suit is to foreclose on your interest in the following described property:

[legal description]

which is located at:

[street address]

In order to defend against this lawsuit, you must respond to the complaint by stating your defense in writing, and by serving a copy upon the person signing this summons within twenty (20) days after the service of this summons, excluding the day of service, or a default judgment may be entered against you without notice. A default judgment is one where plaintiff is entitled to what he asks for because you have not responded. If you serve a notice of appearance on the undersigned person, you are entitled to notice before a default judgment may be entered.

IMPORTANT NOTICE

If judgment is taken against you, either by default or after hearing by the court, your property will be sold at public auction.

You may prevent the sale by paying the amount of the judgment at any time prior to the sale.

If your property is sold, you may redeem the property at any time up to six (6) months after the date of the sale, by paying the amount for which the property was sold, plus interest and costs of the sale.

If you wish to seek the advice of an attorney in this matter, you should do so promptly so that your written response, if any, may be served on time.

[signed] _____

_____
Print or Type Name
( ) Plaintiff
( ) Plaintiff's Attorney

P.O. Address _____
_____
_____

Telephone _____
Dated _____

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.200 Parties and Property.

In foreclosing RUID assessment liens, it is not necessary to bring a separate suit for each of the lots, tracts, or parcels of land or other property or for each separate RUID. All or any of the lots, tracts, or parcels of land or other property upon which RUID assessments are delinquent may be proceeded against in the same action. For all lots, tracts, or parcels that contain a residential structure with an assessed value of at least two thousand dollars ($2,000), all persons owning or claiming to own the property shall be made defendants thereto. For all other lots, tracts, or parcels, the persons whose names appear on tribal records, the assessment roll, tax rolls or BIA Title Records as owners of the property charged with the assessments or taxes shall be made defendants thereto.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.210 Pleadings and Evidence.

In foreclosing RUID assessment liens, the assessment roll and resolution confirming it, or duly authenticated copies thereof, shall be prima facie evidence of the regularity and legality of the proceedings connected therewith. The burden of proof shall be on the defendants.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.220 Trial.

In foreclosing RUID assessments the action shall be tried to the court without a jury. If the parties interested in any particular lot, tract, or parcel default, the court may enter judgment of foreclosure and sale as to such parties and lots, tracts, or parcels and the action may proceed as to the remaining defendants and lots, tracts, or parcels. Judgment and order of sale may be entered as to any one or more separate lots, tracts, or parcels involved in the action and the court shall retain jurisdiction to others.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.230 Judgment.

The judgment shall specify separately the amount of the installments with interest, penalty, and all reasonable costs, including the title searches, chargeable to each lot, tract or parcel. The judgment shall have the effect of a separate judgment as to each lot, tract, or parcel described in the judgment, and any appeal shall not invalidate or delay the judgment except as to the property concerning which the appeal is taken. In the judgment, the court shall order the sale of the lots, tracts, or parcels therein described by the Authority or the Chief of Police and an order of sale shall issue pursuant thereto for the enforcement of the judgment.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-03.240 Sale.

(A) **Title Search.** Prior to the sale of the property, if the property is shown on tribal records or the property tax rolls under unknown owner or if the property contains a residential structure having an assessed value of two thousand dollars ($2,000) or more, the Authority shall order or conduct a title search of the property to determine the record title holders and all persons claiming a mortgage, deed of trust, or mechanic's, laborer's, materialmen's, or vendor's lien on the property.

(B) **Notice of Sale.** At least thirty (30) days prior to the sale of the property, a copy of the notice of sale shall be mailed by certified and regular mail to all defendants in the foreclosure action as to that parcel, lot, or tract and, if the owner is unknown or the property contains a residential structure having an assessed value of two thousand dollars ($2,000) or more, a copy of the notice of sale shall be mailed by regular and certified mail to any additional record title holders and persons claiming a mortgage, deed of trust, or mechanic's, laborer's, materialmen's, or vendor's lien on the property.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-02.250 Right of Redemption.

In foreclosing local improvement assessments, all sales shall be subject to the right of redemption within six (6) months from the date of sale.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

Title 11 – Utilities
Chapter 4 – Reservation Sewer and Water Districts

Sec.

Subchapter I – Formation

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11-04.110 Commission
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11-04.150 Powers of Reservation Sewer and/or Water Districts

Legislative History

Enacted:

Codifying Title 11, Ord. 195 (11/5/03), BIA (11/25/03).

Repealed or Superseded:

Amendment to Ordinance No. 65, Ord. 78 (7/16/91), Enacting Res. 91-7-66, BIA (8/30/91) (establishing new provision for waiver of usual requirements for forming/reorganizing water and/or sewer districts).
Amendment to Ordinance 65, Ord. 72 (7/10/90), Enacting Res. 90-7-66, BIA (8/31/90).
Swinomish Indian Tribal Utility Ordinance, Ord. 65 (10/10/89), Enacting Res. 89-10-95, BIA (10/23/89) (repealing and superseding Ord. 51).
Utility and Environmental Service Ordinance, Ord. 51 (6/4/85), Enacting Res.85-6-41.

Subchapter I – Formation

11-04.010 Authorization.

(A) Reservation sewer and/or water districts for the acquisition, construction, maintenance, operation, development, reorganization, and regulation of a system of sewers or water, including treatment and disposal plants and all necessary appurtenances and providing for additions and betterments thereto, are hereby authorized to be established or reorganized within the exterior boundaries of the Reservation.

(B) Such reorganization of any existing reservation sewer and/or water district shall not affect the outstanding bonds, warrants or other indebtedness incurred by such district prior to its reorganization.

[History] Ord. 195 (11/5/03); Ord. 72 (7/10/90).

11-04.020 Qualified Voters.

(A) **Existing District.** A person is qualified to vote in any election held by a sewer and/or water district only if he or she is at least twenty-one years of age and either owns real property in fee, or is a beneficial owner of real property held in trust by the United States, within the sewer and/or water district.

(B) **New District.** A person is qualified to vote in any election held to form a sewer and/or water district only if he or she is at least twenty-one years of age and owns real property in fee, or is a beneficial owner of real property held in trust by the United States, within the proposed sewer and/or water district.

11-04.030 Formation by Petition to Senate.

(A) **Statement of Need.** For the purpose of formation or reorganization of a reservation sewer and/or water district, a petition shall be presented to the Senate that shall call for the creation or reorganization of the said district, designate the boundaries thereof, and assert that the establishment or reorganization of said district will be conducive to the public health, convenience and welfare and will benefit the property included therein.

(B) **Assessment.** The petition shall specify the proposed property assessment, if any, which shall not exceed one dollar and twenty-five cents ($1.25) per thousand dollars ($1,000) of assessed value, for the general preliminary expenses of the district.

(C) **Signatures.** Said petition shall be signed by at least twenty-five percent (25%) of the qualified voters residing within the district described in the petition on the

date the petition was filed. The said petition shall be filed with the Manager of the Authority, who shall, within thirty (30) days, examine the signatures thereof and certify to the sufficiency or insufficiency. No person having signed such a petition shall be allowed to withdraw his or her name after the filing of the same with the Authority.

(D) **Transmittal to Senate.** If such petition shall be found to contain a sufficient number of signatures, the Authority shall transmit the same, together with a certificate of sufficiency attached thereto, to the Senate.

(E) **Declaration of Necessity.** If such petition is certified to contain a sufficient number of signatures, the Senate may, by resolution, and not otherwise, declare a sewer and/or water district a necessity.

(F) **Notice.** After such a resolution, at a regular or special meeting of the Senate, the Senate shall cause to be published for at least once a week for two (2) successive weeks in a local newspaper of suitable size and general circulation, giving notice that such a petition has been presented, stating the time of the meeting at which the same shall be presented, and setting forth the boundaries of said proposed district.

[History] Ord. 195 (11/5/03); Ord. 72 (7/10/90).

11-04.040 Formation by Senate Resolution.

(A) **Declaration of Necessity.** If in the opinion of the tribal health officer the existing sewerage or water facilities are inadequate in the district to be created and it is for the public welfare, or if in the opinion of the tribal health officer the existing sewerage or water facilities are a menace to the health and convenience of the public, then the Senate may declare a sewer and/or water district a necessity, and such district shall be organized under the provisions of this Title, and all amendments thereto.

(B) **Notice.** After such a resolution, at a regular or special meeting of the Senate, the Senate shall cause to be published for at least once a week for two (2) successive weeks in a local newspaper of suitable size and general circulation, giving notice that such a petition has been presented, stating the time of the meeting at which the same shall be presented, and setting forth the boundaries of said proposed district.

[History] Ord. 195 (11/5/03); Ord. 72 (7/10/90).

11-04.050 Hearing.

(A) **Opportunity to Be Heard.** When such a petition or resolution is presented for hearing, the Senate or its designee shall hear the same or may adjourn said

hearing from time to time so long as the total adjournments do not exceed one (1) month in all. Any person, firm or corporation may appear and make objections to the establishment or reorganization of the said district or the proposed boundary lines thereof.

(B) **Boundaries.** Upon a final hearing, the Senate or its designee shall make such changes in the proposed or reorganized boundary lines as it deems proper and shall establish and define such boundaries and shall find whether the proposed reservation sewer and/or water district will be conducive to public health, welfare and convenience and can be of special benefit to the land included within the said boundaries of said proposed district.

(C) **All Lands Must Benefit.** No lands that will not, in the judgment of the Senate or its designee, benefit by inclusion therein, shall be included within the boundaries of said district as so established and defined, and no change shall be made in said boundary lines to include any territory outside of the boundaries described in the petition, except that the boundaries of any proposed district may be extended at such hearing to include other lands within the Reservation upon a petition signed by the owners of all of the land within the proposed extension, subject to Senate approval.

[History] Ord. 195 (11/5/03); Ord. 72 (7/10/90).

11-04.060 Senate.

(A) **Senate Must Approve.** Notwithstanding any provision of law to the contrary, no reservation sewer and/or water district shall form or reorganize, annex or withdraw territory, consolidate or merge into a reservation sewer and/or water district unless such proposed action shall be approved by the Senate.

(B) **Notice.** The Senate shall, within thirty (30) days after receiving notice of the proposed action, approve such action or schedule a hearing on such action.

(C) **Decision.**

(1) **Timeline.** The Senate shall decide within sixty (60) days of a hearing whether to approve or disapprove such proposed action.

(2) **Criteria.** The Senate shall consider the following criteria:

(a) Whether the proposed action in the area under consideration is in compliance with the Tribal Comprehensive Plan and its supporting documents; and

(b) Whether the proposed action is in compliance with the policies expressed in the Tribal plan for water and/or sewage facilities.

(c) If the proposed action is inconsistent with subsections (a) or (b) of this Subsection, the Senate shall not approve it. If such action is consistent with both subsections, the Senate may approve it provided that the Senate finds that utility service in the area under consideration will be most appropriately served by a reservation sewer and/or water district rather than the Authority itself. If there has not been adopted for the area under consideration a plan under subsections (C)(2)(a) or (b) of this Section, the proposed action shall not be found inconsistent with such subsection.

[History] Ord. 195 (11/5/03); Ord. 72 (7/10/90).

11-04.070 Election.

(A) **Voting.** No water and/or sewer district shall be established or reorganized unless it is approved by a majority of the qualified voters voting on the proposition.

(B) **Special Election.** Upon entry of the findings of the final hearing on the petition, if the Senate finds that the proposed sewer and/or water system will be conducive to the public health, welfare, and convenience and be of special benefit to the land within the boundaries of the said proposed or reorganized district, it shall by resolution call a special election to be held not less than thirty (30) days and not more than sixty (60) days from the date thereof.,

(C) **Notice.** Notice of such election shall be published at least once a week for four (4) successive weeks in a local newspaper of suitable size and general circulation, setting forth the hours during which the polls will be open, the boundaries of the proposed or reorganized district as finally adopted, and the object of the elections. The notice shall also be posted for ten (10) days in the proposed or reorganized district.

(D) **Ballot.**

(1) **Formation of New District.** A proposition to establish a new reservation sewer and/or water district shall be expressed on the ballots in the following terms:

RESERVATION SEWER AND/OR WATER DISTRICT..... YES
RESERVATION SEWER AND/OR WATER DISTRICT..... NO

(2) **Reorganization of Old District.** A proposition to reorganize an old reservation sewer and/or water district shall be expressed on the ballot in the following terms:

RESERVATION SEWER AND/OR WATER DISTRICT REORGANIZATION...YES
RESERVATION SEWER AND/OR WATER DISTRICT REORGANIZATION...NO

(3) **Name.** In each instance, the ballot shall also state the name of the district as decided by the Senate.

(4) **Assessment.** At the same election, the Senate may submit a proposition to the voters, for their approval or rejection, authorizing the reservation sewer and/or water district, if formed, to assess at the earliest time permitted by law on all property located in the district a fee for one (1) year, in the amount specified in the petition to create the district, not to exceed one dollar and twenty-five cents ($1.25) per thousand dollars ($1,000) of assessed value, for general preliminary expenses of the district. Said proposition shall be expressed on the ballots in the following terms:

One year....dollars and...cents per thousand dollars of assessed value..... YES
One year....dollars and...cents per thousand dollars of assessed value..... NO

(E) To be effective, such proposition must be approved by a majority of the qualified voters voting in the election.

[History] Ord. 195 (11/5/03); Ord. 72 (7/10/90).

11-04.080 Declaration of New / Reorganized District.

If at such election a majority of the voters in each district voting upon such proposition shall vote in favor of the formation or reorganization of such district and/or districts, the Authority shall so declare in its canvass of the returns of such election.

[History] Ord. 195 (11/5/03); Ord. 72 (7/10/90).

11-04.090 Formation by Petition to Manager.

(A) **Petition.** As an alternative to the methods of formation set out above, a reservation sewer and/or water district may be formed by a petition signed by at least sixty percent (60%) of the property owners whose property is included in the proposed district. The petition shall propose the formation of the district, designate the boundaries thereof, and indicate the name of the district.

(B) **Manager of the Authority.** The petition shall be filed with the Manager of the Authority, who shall, within thirty (30) days, examine the signatures thereof and

certify to the sufficiency or insufficiency. No person having signed such a petition shall be allowed to withdraw his or her name after the filing of the petition with the Manager of the Authority. If the petition is found to contain a sufficient number of signatures, the Manager of the Authority shall forward the petition to the Senate.

(C) **Hearing.** Upon receipt of a petition for formation, the Senate or its designee shall schedule a hearing pursuant to Section 11-04.040. The Senate shall decide within sixty (60) days of a hearing to approve or disapprove the proposed action.

[History] Ord. 195 (11/5/03); Ord. 72 (7/10/90).

11-04.100 Tribal Utility Authority to Conduct Elections.

(A) All elections held pursuant to this Section shall be conducted by the Tribal Utility Authority.

(B) The expense of all such elections shall be paid for out of the funds of such sewer and/or water district.

[History] Ord. 195 (11/5/03); Ord. 72 (7/10/90).

Subchapter II – Governance

11-04.110 Commission.

(A) **Board of Commissioners.** The governing body of a sewer and/or water district shall be a board of commissioners consisting of three (3) members. The commissioners shall annually elect one (1) of their number as president and another as secretary of the board.

(B) **Compensation.**

(1) **Per Diem.** A district shall provide by resolution for the payment of compensation to each of its commissioners at a rate not to exceed fifty dollars ($50) for each day or portion thereof devoted to the business of the district; Provided, that the compensation for each commissioner shall not exceed four thousand eight hundred dollars ($4,800) per year. In addition, the secretary may be paid a reasonable sum for clerical services.

(2) **Waiver.** Any commissioner may waive all or any portion of his or her compensation payable under this Section as to any month or months during his or her term of office, by a written waiver filed with the district as provided in this Section. The waiver, to be effective, must be filed any time after the commissioner's election and prior to the date on which the

compensation otherwise would have been paid. The waiver shall specify the month or period of months for which it is made.

(C) **Employment.** No commissioner shall be employed full time by the district.

(D) **Procedure.** The board shall by resolution adopt rules governing the transaction of its business. All proceedings shall be by resolution recorded in a book kept for that purpose, which shall be a public record.

[History] Ord. 195 (11/5/03); Ord. 72 (7/10/90).

11-04.120 Terms of Office.

(A) **First Election.** At the election held to form or reorganize a district, there shall be elected three (3) commissioners who shall assume office immediately thereafter and hold office for terms of two (2), four (4), and six (6) years respectively, and until their successors are elected and qualified and assume office.

(B) **Subsequent Elections.** The term of each nominee shall be expressed on the ballot and shall be computed from the first day of January following the election. Thereafter, every two (2) years there shall be elected a commissioner for a term of six (6) years and until his or her successor is elected and qualified.

[History] Ord. 195 (11/5/03); Ord. 72 (7/10/90).

11-04.130 Nominations, Elections, and Vacancies.

(A) **Nominations.** Nominations for the first board of commissioners to be elected at the election for the formation of the sewer and/or water district shall be by petition of ten (10) voters qualified under Section 11-04.020. The petition shall be filed with the manager of the Authority at least thirty (30) days before the election.

(B) **Election.** Thereafter candidates for the office of sewer and/or water commissioner shall file declarations of candidacy. The election shall be conducted by the district. Any voter qualified under Section 11-04.020 who is a resident in the district at the time of election may vote in any election held in the sewer and/or district.

(C) **Vacancies.** A vacancy or vacancies shall be filled by appointment by the remaining commissioner or commissioners until the next regular election for commissioners; Provided, that if there are two (2) vacancies on the board, one (1) vacancy shall be filled by appointment by the remaining commissioner and the one remaining vacancy shall be filled by appointment by the then two (2) commissioners and said appointed commissioners shall serve until the next regular election for commissioners. If the vacancy or vacancies remain unfilled

for six (6) months, the Authority shall make the necessary appointment or appointments. If there is a vacancy of the entire board, a new board may be appointed by the Senate.

[History] Ord. 195 (11/5/03); Ord. 72 (7/10/90).

11-04.140 Waiver From Usual Formation/Reorganization Procedures.

(A) If a private sewer and/or water system desires to establish itself as a Reservation Sewer and/or Water District, the Senate may waive the formation procedures set out above; Provided, that the private sewer and/or water system meets the following conditions:

(1) The private sewer and/or water system shall be entirely within the exterior boundaries of the Reservation;

(2) The private sewer and/or water system shall have been in existence and providing services for a period of not less than ten (10) years;

(3) The owners of the private sewer and/or water system shall provide the Tribe with its organizational documents, which shall show its:

(a) Decision making procedures;

(b) Authority to convert from a private sewer and/or water system to a Reservation Sewer and/or Water District; and

(c) Organizational and service boundaries;

(4) The private sewer and/or water system shall provide notice and a hearing for its members to discuss the merits of converting to a Reservation Sewer and/or Water District; and

(5) The private sewer and/or water system shall present a formal resolution to the Senate requesting Reservation Sewer and/or Water District status and indicate why it qualifies for a waiver from the usual formation procedures.

(B) The Senate, after receiving a formal request from a private sewer and/or water system, shall determine whether:

(1) It is in the best interests of the Tribe to grant such a waiver; and

(2) Additional conditions shall be met or agreed to by the private sewer and/or water district as a prerequisite to granting a waiver.

(C) If the Senate grants a waiver from the usual formation procedures set out herein, a newly established Reservation Sewer and/or Water District shall thereafter:

(1) Continue to operate, maintain and regulate its sewer and/or water system pursuant to its existing organizational documents unless agreed otherwise; and

(2) Conform to and abide by all tribal and federal laws, rules and regulations governing sewer and water.

(D) Conversion to a Reservation Sewer and/or Water District by an existing private sewer and/or water system shall not affect the outstanding bonds, warrants or other indebtedness incurred by the private sewer and/or water system prior to its conversion.

[History] Ord. 195 (11/5/03); Ord. 78 (7/16/91).

11-04.150 Powers of Reservation Sewer and/or Water Districts.

The authority and powers of reservation sewer and/or water districts shall include but not be limited to the following, as provided in this Chapter:

(A) Authority to adjust rates;

(B) Additions/betterments;

(C) Contracting;

(D) Compel connection to system;

(E) Lien on property;

(F) Change name; and

(G) Incur debt.

[History] Ord. 195 (11/5/03); Ord. 72 (7/10/90).

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Legislative History

Enacted:

Codifying Title 11, Ord. 195 (11/5/03), BIA (11/25/03).

Repealed or Superseded:

Issuance of Tribal Obligations, Ord. 86 (12/10/91), Enacting Res. 91-12-112, BIA (1/30/90) (amending Ord. 65).
Swinomish Indian Tribal Community Utility Ordinance, Ord. 65 (10/10/89), Enacting Res. 89-10-95, BIA (10/23/89).

[Ed. Note: Ord. 65 was originally numbered 62.]

Subchapter I – General Provisions

11-05.010 Authority.

The issuance of bonds and obligations under this Chapter is made pursuant to Article VI, Section 1(m) of the Swinomish Constitution, approved by the United States Secretary of the Interior ("Secretary") on January 27, 1936, and ratified by the Swinomish Indian Tribal Community on November 16, 1935, with amendments approved by the Secretary on December 14, 1949; April 17, 1950; April 27, 1966; May 31, 1966; and October 22, 1985.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

10-05.020 Definitions.

Unless the context clearly requires otherwise, the definitions in this Section apply throughout this Chapter.

(A) **"Bond"** means any agreement that may or may not be represented by a physical instrument, including notes, warrants, or certificates of indebtedness, that evidences an indebtedness of the Tribe or a fund thereof, where the Tribe agrees to pay a specified amount of money with or without interest, at a designated time or times to either registered owners or bearers.

(B) **"Comptroller"** means the Tribal Controller of the Swinomish Indian Tribal Community.

(C) **"Credit Enhancement"** means a letter of credit, line of credit, bond insurance policy, or other device or facility used to secure or support a bond or obligation issued under this Chapter

(D) **"Credit Enhancement Agreement"** means any reimbursement agreement or other agreement providing for the issuance of any credit enhancement.

(E) **"Installment Note"** means any instrument, document, or other writing representing the issuer's obligation to pay, and the owner's right to receive, principal and interest in fixed amounts, for fixed periods of time, to the buyer.

(F) **"Interest Coupon"** means any instrument, document, or other writing representing the issuer's obligation to pay, and the owner's right to receive, interest, especially on a bond or other obligation.

(G) **"Line of Credit"** means a contractual relationship between a borrower and a lender, often a bank, by which the borrower can borrow up to a maximum sum of money for a range of agreed upon purposes so that the lender does not need to approve each particular transaction.

(H) **"Local Improvement Bond"** means a bond issued to finance a Reservation Utility Improvement District ("RUID").

(I) **"Note"** means any instrument, document, or other writing representing the signer's or maker's express and absolute promise to pay a definite sum of money at a specified time.

(J) **"Obligation"** means an agreement that evidences an indebtedness of the Tribe, other than a bond, and includes, but is not limited to, conditional sales contracts, lease obligations, and promissory notes.

(K) **"RUID"** means a Reservation Utility Improvement District as described in this Chapter.

(L) **"Warrant"** means an order or other writing by which the person issuing the warrant authorizes someone to pay a particular sum of money.

[History] Ord. 195 (11/5/03); Ord. 86 (12/10/91); Ord. 65 (10/10/89).

Subchapter II – RUID Bonds

11-05.030 Authority to Issue Bonds.

The Tribe may provide by resolution for the payment of the whole or any portion of the cost and expense of any local improvement bonds of the Tribe for such RUID, but no bonds shall be issued in excess of the cost and expense of the improvement, nor shall they be issued prior to twenty (20) days after the thirty (30) days allowed for the payment of assessments without penalty or interest.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.040 Due Date and Interest.

Local improvement bonds shall be issued pursuant to this Chapter and shall be made payable on or before a date not to exceed thirty (30) years from and after the date of issue, which latter date may be fixed by resolution of the Senate, and bear interest at such rate or rates as authorized by the Senate. The Senate may, in addition to issuing bonds callable pursuant to tribal law whenever sufficient moneys are available, issue bonds with a fixed maturity schedule or with a fixed maximum annual retirement schedule.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.050 Amount, Terms, and Conditions.

The Senate, on behalf of the Tribe, shall determine for the bond issue its amount, date or dates, terms not in excess of the maximum term otherwise provided in law, conditions, bond denominations, interest rate or rates, which may be fixed or variable, interest payment dates, maturity or other maturities, redemption rights, registration privileges, manner of execution, price, manner of sale, covenants, and form, including registration as to principal and interest, registration as to principal only, or bearer. Registration may be as provided under Section 11-05.110 hereof.

[History] Ord. 195 (11/5/03); Ord. 86 (12/10/91); Ord. 65 (10/10/89).

11-05.060 Interest Payments.

The Comptroller shall pay interest on the bonds issued against local improvement funds out of the local improvement fund from which the bonds are payable.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.070 Form and Content.

(A) **Denominations and Numbering.** Local improvement bonds shall be in such denominations as may be provided in the resolution authorizing their issue and shall be numbered from one upwards consecutively.

(B) **Contents.** Each bond shall:

(1) Be signed by the Chair of the Senate and attested by the Comptroller;

(2) Have the seal of the Tribe affixed thereto;

(3) Refer to the improvement for which it is issued and the ordinance ordering it;

(4) Provide that the principal sum therein named and the interest thereon shall be payable out of the local improvement fund created for the cost and expense of the improvement, or out of the local improvement guaranty fund, and not otherwise;

(5) Provide that the bond owners' remedy in case of nonpayment shall be confined to the enforcement of the special assessments made for the improvement and to the guaranty fund; and

(6) Be in any form, including bearer bonds or registered bonds as provided by tribal law.

(C) **Interest Coupons.** Any interest coupons may be signed by the Chair of the Senate and attested to by the Comptroller, or in lieu thereof, may have printed thereon a facsimile of their signatures.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.080 Reproduction of Physical Instrument.

When bonds are issued by the Tribe as physical instruments, the bonds shall be printed, engraved, lithographed, typed, or reproduced and the manual or facsimile signatures of both the Chair of the Senate and the Comptroller shall be included on each bond.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.090 Sale.

Local improvement bonds may be issued to the contractor or sold by the officers authorized by Senate resolution, in the manner prescribed and at the price established by the Senate. Any portion of the bonds of any issue remaining unsold may be issued to the contractor constructing the improvement in payment thereof.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.100 Sale Proceeds.

The proceeds of all sales of bonds shall be applied in payment of the cost and expense of the improvement and the costs of issuance of the bonds.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.110 Registration of Obligations.

(A) **Registration System.**

(1) The Tribe shall establish a system of registering the ownership of their bonds or other obligations as to principal and interest, or principal only.

(2) Registration may include, without limitation:

(a) A book entry system of recording the ownership of a bond or other obligation whether or not a physical instrument is issued; or

(b) Recording the ownership of a bond or other obligation together with the requirement that the transfer of ownership may only be effected by the surrender of the old bond or other obligation and either the reissuance of the old bond or other obligation or the issuance of a new bond or other obligation to the new owner.

(B) **Transfer.** The system of registration shall define the method or methods by which transfer of the registered bonds or other obligations shall be effective, and by which payment of principal and any interest shall be made. The system of registration may permit the issuance of bonds or other obligations in any denomination to represent several registered bonds or other obligations of smaller denominations.

(C) **Incidental Matters.** The system of registration may also provide for any writing relating to a bond or other obligation that is not issued as a physical instrument, for identifying numbers of other designations, for a sufficient supply of certificates for subsequent transfers, for record and payment dates, for varying denominations, for communications to the owners of bonds or other obligations, for accounting, canceled certificate destruction, registration and release of securing interests, and for such other incidental matters pertaining to the registration of bonds or other obligations as the issuer may deem to be necessary or appropriate.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.120 Trustee or Agent.

(A) **Bank.** The Tribe may appoint a national banking association or state chartered bank, maintaining a minimum capital surplus of twenty-five million dollars ($25,000,000) (collectively the "Bank"), to act with respect to an issue of its bonds or other obligations as authenticating trustee, transfer agent, registrar, and paying or other agent and specify the rights and duties and means of compensation of any such bank so acting. The Tribe may also enter into agreements with the bank in connection with the establishment and maintenance by such bank of a nationally recognized central depository system for the transfer or pledge of bonds or other obligations.

(B) **Reserved Authority.** Nothing in this Section precludes the Tribe or a trustee appointed by the Tribe pursuant to any other provision of law, from itself performing, either alone or jointly with other issuers, fiscal agencies, or trustees, any transfer, registration, authentication, payment of other function described in this Section.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.130 Costs of Issue.

The proceeds of any bonds issued may be used to pay incidental costs and costs related to the sale and issuance of the bonds. Such costs include payments for fiscal and legal expenses, obtaining bond ratings, printing, engraving, advertising, establishing and funding reserve accounts and other accounts, an amount for working capital, capitalized interest for up to six (6) months, necessary and related engineering, architectural, planning, and inspection costs, and other similar activities or purposes.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.140 Lines of Credit.

The Senate, on behalf of the Tribe, is authorized to establish lines of credit with any national saving association or state chartered bank to be drawn upon in exchange for its bonds or other obligations, to delegate to its fiscal officer authority to determine the amount of credit extended, and to pay interest and other finance or service charges provided such lines of credit may be secured only by specified revenues or assets of the Tribe. The interest rates on such bonds or other obligations may be a fixed rate or rates set periodically or a variable rate or rates determined by agreement of the parties.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.150 Call of Bonds Outstanding.

(A) **Call.** Except when local improvement bonds have been issued with a fixed maturity schedule or with a fixed maximum annual retirement schedule as authorized under tribal law, the Comptroller shall call in and pay the principal of one or more bonds of any issue in their numerical order whenever there is sufficient money in any local improvement fund, against which the bonds have been issued, over and above that which is sufficient for the payment of interest on all unpaid bonds of that issue.

(B) **Notice.** The call shall be published in a local newspaper of suitable size and general circulation in its first publication following the date of delinquency of any installment of the assessment or as soon thereafter as practicable. The call shall state that bonds No. _____ (giving the serial number or numbers of the local improvement bonds called) will be paid on the day the next interest payments are due and that interest on those bonds will cease upon that date.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.160 Community Liability.

(A) **Limited Liability.** Neither the holder nor owner of any local improvement bond, interest coupon, or warrant issued against a local improvement fund shall have any claim against the Tribe, the Authority, or the Commission by which it is issued, except for payment from the special assessments made for the improvement for which the bond or warrant was issued and except also for payment from the local improvement guaranty fund of the Tribe as to bonds issued after the creation of a local improvement guaranty fund of the Tribe, if any.

(B) **Loss to Guaranty Fund.** The Tribe, the Authority or the Commission shall not be liable to the holder or owner of any bond, interest coupon, or warrant for any loss to the local improvement guaranty fund occurring in the lawful operation thereof.

(C) **Notice.** A copy of Subsections (A) and (B) of this Section shall be plainly written, printed or engraved on each local improvement bond.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.170 Bondholders' Remedies.

(A) **Foreclosure.** If the Tribe or the Authority fails to pay any bonds or to promptly collect any local improvement assessments when due, the owner of the bonds may proceed in his or her own name to collect the assessment and foreclose the lien thereof in any court of competent jurisdiction and recover in addition to the amount of the bond and interest thereon, five percent (5%), together with the cost of suit. Any number of holders of bonds for any single improvement may join as plaintiffs and any number of owners of property upon which the assessments are liens may be joined as defendants in the same suit.

(B) **Improvement Guaranty Fund.** The owners of local improvement bonds issued by the Tribe after the creation of a local improvement guaranty fund shall also have recourse against the local improvement guaranty fund of the Tribe.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

Subchapter III – Other Obligations

11-05.180 Warrants Against Local Improvement Fund.

(A) **Warrants.** The Senate may provide by resolution for the issuance of warrants in payment of the cost and expense of any local improvement, payable out of the local improvement district fund. The warrants shall bear interest at a rate or rates established by the issuing officer under the direction of the Senate and shall be redeemed either in cash or by local improvement bonds for the same improvement authorized by resolution.

(B) **Priority.** All warrants against any local improvement fund sold by the Tribe or issued to a contractor and sold or hypothecated by him or her for a valuable consideration shall be claims and liens against the improvement fund against which they are drawn prior and superior to any right, lien, or claim of any surety upon the bond or bonds given to the Tribe or the Authority by or for the contractor to secure the performance of his or her contract or to secure the payment of persons who have performed work thereon or furnished materials, or provisions and supplies for the carrying on of the work.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.190 Warrants Acceptable in Payment of Assessments.

The Comptroller may accept warrants drawn against any local improvement fund upon such conditions as the Senate may by ordinance or resolution prescribe, in satisfaction of:

(A) Assessments levied to supply such fund, in due order of priority of right;

(B) Judgments rendered against property owners who have become delinquent in the payment of assessments levied to supply such fund; and

(C) On payment of certificates of purchase in cases where property has been sold under execution or at tax sale for failure to pay assessments levied to supply such fund.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.200 Installment Notes.

(A) **Authority to Issue.** In addition to the issuance of bonds and warrants in payment of the cost and expense of any local improvement, the Tribe may also issue and sell installment notes payable out of the local improvement district fund. Such installment notes may be issued any time after the thirty (30) day period allowed by law for the payment of assessments of any district without penalty or interest, and may bear any denomination or denominations, the aggregate of which shall represent

the balance of the cost and expense of the local improvement district that is to be borne by the property owners therein.

(B) **Annual Payment.** Application of local improvement district funds for the reduction of the principal and interest amounts due on any notes herein provided to finance said improvements shall be made not less than once each year beginning with the issue date thereof.

(C) **Notice.** The Comptroller shall make appropriate notice of such application of funds to the registered payees of said notes, except those notes owned by the Tribe. Such notes may be registered as provided in Section 11-05.110 of this Chapter.

(D) **Numbering.** If more than one local improvement installment note is issued for a single district, said notes shall be numbered consecutively.

(E) **Contents of Face of Note.** All notes shall bear on the face thereof:

(1) The name of the payee;

(2) The number of the local improvement district from whose funds the notes are payable;

(3) The date of issue of each note;

(4) The date on which the note, or the final installment thereon, shall become due;

(5) The rate or rates of interest, as provided by the Senate, to be paid on the unpaid balance thereof; and

(6) Such manual or facsimile signatures as are required by Sections 11-05.070 and 11-05.080

(F) **Contents of Back of Note.**

(1) **Payment Record.** The reverse side of each installment note issued pursuant to this Section shall bear a tabular payment record that shall indicate at prescribed installment dates, the receipt of any local improvement district funds for the purpose of servicing the debt evidenced by said notes. Such receipts shall be first applied toward the interest due on the unpaid balance of the note, and any additional moneys shall be applied to a reduction of the principal amount thereof.

(2) **Unpaid Balance.** The tabular payment record shall, in addition to the above, show the unpaid principal balance due on each installment note.

(3) **Signature.** The tabular payment record shall have sufficient space opposite each transaction affecting said note for the manual signature of the Comptroller or other properly designated receiving officer of the Tribe, or of any other registered payee presenting said note for such installment payments.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.210 Certificate of Default.

(A) **Authority.** Whenever there are insufficient funds in a local improvement district fund to meet any payment of installment interest due on any note herein authorized, the Comptroller shall issue a non-interest-bearing defaulted installment interest certificate.

(B) **Contents.** Said certificate shall consist of: (1) a written statement certifying the amount of such defaulted interest installment; (2) the name of the payee of the note to whom the interest is due; and (3) the number of the local improvement district from whose funds the note and interest hereof is payable. Such certificates may be registered as provided in Section 11-05.110. The certificate herein provided shall bear the manual signature of the Comptroller or his or her authorized agent.

(C) **Redemption.** The defaulted installment interest certificate so issued shall be redeemed for the face amount thereof with any available funds in the local improvement guaranty fund.

(D) **Guaranty Fund.** Whenever at the date of maturity of any installment note issued pursuant to this Section, there are insufficient funds in a local improvement district fund, due to delinquencies in the collection of assessments, to pay the final installment of the principal due thereon, the note shall be redeemed with any available funds in the local improvement guaranty fund for the amount of said final installment.

[History] Ord. 195 (11/5/03); Ord. 86 (12/10/91); Ord. 65 (10/10/89).

11-05.220 Refunding of Installment Notes.

(A) **Authority and Mechanism.** The Tribe may refund all of its installment or the principal thereof then outstanding from any one local improvement district fund by the issuance of local improvement district bonds pursuant to this Chapter and by the payment into the Tribe's general fund or funds holding such notes the then outstanding principal amount of such notes plus the interest thereon accrued to the date of such refunding.

(B) **Limitations.**

The bonds shall be:

(1) Payable from the same local improvement district fund from which such notes were payable;

(2) Payable no later than the final payment date of the notes being refunded;

(3) In the same total principal amount as the outstanding principal of the notes being refunded, less any sums in the local improvement district fund the Tribe applies to the redemption of such notes; and

(4) Sold at not less than par plus accrued interest to date of delivery.

(C) **Interest.** Any interest payable on the bonds in excess of the interest payable on assessment installments payable into the local improvement district fund shall be paid from the general fund of the Tribe. The principal proceeds and interest accrued to date of delivery of the bonds shall be paid into the local improvement district fund, and the notes shall be redeemed on that date. The Tribe shall pay all costs and expenses of such refunding from moneys available therefor.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.230 Consolidated RUID.

For the purpose of issuing local improvement bonds only, the Senate may authorize the establishment of consolidated RUIDs. The local improvements within such consolidated districts need not be adjoining, neighboring, or nearby. If the Senate orders the creation of such consolidated RUID, the moneys received from the installment payment of the principal of and interest on assessments levied within the original local assessment districts shall be deposited in a consolidated RUID bond redemption fund to be used to redeem outstanding consolidated RUID bonds.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.240 Refunding Bonds.

(A) **Authority.** The Senate may issue and sell bonds to refund outstanding RUID or consolidated RUID bonds on the earliest date such outstanding bonds may be redeemed following the date of issuance of such refunding bonds.

(B) **Limitations.** Such refunding shall be subject to the following:

(1) The refunding shall result in a net interest cost savings after paying the costs and expenses of the refunding, and the principal amount of the refunding bonds may not exceed the principal balance of the assessment roll or rolls pledged to pay the bonds being refunded at the time of the refunding.

(2) The refunding bonds shall be paid from the same local improvement fund or

bond redemption fund as the bonds being refunded.

(3) The costs and expenses of the refunding shall be paid from the proceeds of the refunding bonds, or the same local improvement district fund or bond redemption fund for the bonds being refunded, except the Tribe or the Authority may advance such costs and expenses to such fund pending the receipt of assessment payments available to reimburse such advances.

(4) The last maturity of the refunding bonds shall be no later than one (1) year after the last maturity of bonds being refunded.

(5) The refunding bonds may be exchanged for the bonds being refunded or may be sold in the same manner permitted at the time of sale for local improvement bonds.

(6) All other provisions of law applicable to the refunded bonds shall apply to the refunding bonds.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

Subchapter IV – Satisfaction of Bonds and Warrants

11-05.250 Abandonment.

(A) **Outstanding Bonds.** If the Tribe has any outstanding and unpaid local improvement bonds or warrants issued in connection with a local improvement therein to which the local guaranty fund law is not applicable and that have been delinquent for more than fifteen (15) years, it may, by resolution, direct that the money, if any, remaining in a given local improvement fund for which no real property is held in trust shall be distributed by the Comptroller on a pro rata basis, without any reference to numerical order, to the holders of outstanding bonds or warrants for each such fund, excluding the accrued interests thereon.

(B) **Abandonment.** If the outstanding bonds or warrants are not presented for payment within one (1) year after the last date of publication of notice provided for herein, the money being held in the local improvement fund of the Tribe shall be deemed abandoned, and shall be transferred to the general fund of the Tribe.

(C) **Notice.** Before an outstanding bond or warrant may be deemed abandoned, the Tribe shall publish a notice once each week for two (2) successive weeks in a local newspaper of suitable size and general circulation that R.U.I.D. bonds for R.U.I.D. Improvement Nos._____ to _____ inclusive must be presented to the Tribe for payment not later than one (1) year from this date, or the money being held in the local improvement fund of the Tribe shall be transferred to the Tribe general fund.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-05.260 Declaration of Obsolescence.

After the Tribe has distributed the money in a local improvement district fund in accordance with Section 11-05.250 or such bonds or warrants are not presented for payment within one (1) year after the last date of publication of notice provided for in Section 11-02.250(C) the Tribe may, by resolution, declare such bonds and warrants, without any reference to numerical order, obsolete, cancel the same, and terminate all accounting thereon, and clear such bonds and warrants off their records including any unguaranteed bonds or warrants outstanding against districts in which there remains no money in the given local improvement fund.

[History] Ord. 195 (11/5/03); Ord. 86 (12/10/91); Ord. 65 (10/10/89).

11-05.270 Cancellation Procedure.

If the bonds or warrants outstanding against the RUID are unguaranteed and if there remains no money in the appropriate local improvement fund to pay them, and if no real property is held in trust for the fund, the Tribe shall give notice in the same manner as provided in Section 11-02.260(C) stating that R.U.I.D. _____ bonds or warrants) for _____ R.U.I.D. improvement Nos. _____to _____ inclusive will be canceled as provided in Section 11-05.250 unless such bonds or warrants are presented to the Comptroller within one (1) year from the date of last publication of the notice, together with good cause shown as to why such cancellation should not take place. If such bonds or warrants are not presented, with good cause shown, within one (1) year after the last date of publication of such notice, they may be canceled as provided in Section 11-05.260.

[History] Ord. 195 (11/5/03); Ord. 86 (12/10/91); Ord. 65 (10/10/89).

Subchapter V – Sewer and Water Utility Bonds

11-05.280 Authority.

The authority to issue revenue bonds and to enter into credit enhancement agreements under this Section is supplementary and in addition to any authority otherwise existing, and shall be

exercised only to finance the construction of sewer and/or water utilities or improvements thereof, as provided in this Subchapter below.

[History] Ord. 195 (11/5/03); Ord. 86 (12/10/91).

11-05.290 Maximum Term.

The maximum term of any revenue bonds shall be forty (40) years unless another ordinance authorizing the Tribe or a subordinate entity thereto provides for a different maximum term, in which event the Tribe or a subordinate entity thereto may issue revenue bonds only with terms not in excess of such different maximum term.

[History] Ord. 195 (11/5/03); Ord. 86 (12/10/91).

11-05.300 Special Fund for Principal and Interest.

The Senate shall create a special fund or funds, or use an existing special fund or funds, from which the principal and interest on such revenue bonds shall be payable. The Senate may also use reserve funds or any credit enhancement to pay the same.

[History] Ord. 195 (11/5/03); Ord. 86 (12/10/91).

11-05.310 Covenants.

(A) **Authority.** Subject to the limitations contained in this Section, the Senate may provide such covenants as it may deem necessary to secure the payment of the principal of and interest on revenue bonds, and premium on revenue bonds, if any, and to enter into credit enhancement agreements.

(B) **Types of Covenants.**

Such covenants or credit enhancement agreements may include, but are not limited to:

(1) Depositing certain revenues into a special fund or funds as provided in Section 11-05.320.

(2) Establishing, maintaining, and collecting fees, rates, charges, tariffs, or rentals, or facilities and services whose income is pledged for the payment of such bonds or credit enhancement agreements;

(3) Operating, maintaining, managing, accounting, and auditing the Tribe;

(4) Appointing trustees, depositaries, and paying agents; and

(5) Any and all matters of like or different character that affect the security or protection of the revenue bonds or credit enhancement agreements.

[History] Ord. 195 (11/5/03); Ord. 86 (12/10/91).

11-05.320 Special Fund for Operations and Maintenance.

(A) **Authority.** The Senate may obligate the Tribe or the subordinate entity whose activities are being financed to set aside and pay into a special fund or funds created under Section 11-05.300 a proportion or a fixed amount of certain revenues.

(B) **Source of Revenues.** Such revenues shall come from the following source:

(1) The public improvements, projects, or facilities that are financed by the revenue bonds;

(2) The public utility or system, or an addition or extension to the public utility or system, where the improvements, projects, or facilities financed by the revenue bonds are a portion of the public utility or system;

(3) All the revenues of the Tribe or the subordinate entity whose activities are being financed; or

(4) Any other money legally available for such purposes.

(C) **Definition of Revenue.** As used in this Section, the term "revenues" includes the operating revenues of the Authority, the Tribe or a subordinate entity to the Tribe that result from fees, rates, charges, tariffs, or rentals imposed upon the use or availability or benefit from projects, facilities, or utilities owned or operated by the Authority and from related services provided by the Tribe or the subordinate entity thereof whose activities are being financed and other revenues legally available to be pledged to secure the revenue bonds or any credit enhancement issued to secure such revenue bonds.

[History] Ord. 195 (11/5/03); Ord. 86 (12/10/91).

11-05.330 Maintenance and Operating Expenses.

(A) **Priority.** The proportion or fixed amount of revenue so obligated shall be a lien and charge against these revenues, subject only to maintenance and operating expenses. The Senate shall have due regard for the cost of maintenance and operation of the public utility, system, improvement, project, facility, addition, or extension that generates revenues obligated to be placed into the special fund or funds from which the revenue bonds or any credit enhancement issued to secure such revenue bonds are payable, and shall not set aside into the special fund or funds a greater amount or proportion of the revenues that in its judgment will be available over and above such

cost of maintenance and operation and the proportion or fixed amount, if any, of the revenue so previously pledged.

(C) **No Obligation.** Other revenues, including tax revenues, lawfully available for maintenance or operation of revenue-generating facilities may be used for maintenance and operation purposes even though the facilities are acquired, constructed, expanded, replaced, or repaired with moneys arising from the sale of revenue bonds. However, the use of these other revenues for maintenance and operation purposes shall not be deemed to directly or indirectly guarantee the revenue bonds or create a general obligation. The obligation to maintain and impose fees, rates, charges, tariffs, or rentals at levels sufficient to finance maintenance and operations shall remain if the other revenues available for such purposes diminish or cease.

(D) The Senate may also provide that revenue bonds payable out of the same source or sources of revenue may later be issued on a parity with any revenue bonds being issued and sold.

[History] Ord. 195 (11/5/03); Ord. 86 (12/10/91).

11-05.340 No General Obligation.

(A) **Special Obligation.** A revenue bond or credit enhancement agreement executed by the Tribe shall not constitute a general obligation of the Tribe or the subordinate entity thereof whose activities are being financed. Instead it constitutes a special obligation of the Tribe or subordinate entity and the interest and principal on the bond or credit enhancement agreement shall only be payable from the special fund or funds established pursuant to Section 11-05.300 the revenues lawfully pledged to the special fund or funds, and any lawfully created reserve funds.

(B) **Special Fund.** The owner of a revenue bond shall not have any claim for the payment thereof against the Tribe or the subordinate entity thereof whose activities are being financed arising from the revenue bonds except for payment from the special fund or funds, the revenues lawfully pledged to the special fund or funds, and any lawfully created reserve funds.

(C) **Notice of Limitation.** The substance of the limitation included in this Section shall be plainly printed, written, engraved, or reproduced on: (1) each revenue bond that is a physical instrument; (2) the official notice of sale; and (3) each official statement associated with the bonds.

(D) **Authority to Create Accounts.** The authority to create a fund shall include the authority to create accounts within a fund.

[History] Ord. 195 (11/5/03); Ord. 86 (12/10/91).

11-05.350 Covenant to Maintain Improvements.

The Tribe, when issuing revenue bonds or entering into credit enhancement agreements payable from revenues derived from projects, facilities, or utilities, shall covenant to maintain and keep these projects, facilities, or utilities in proper operating condition for their useful life.

[History] Ord. 195 (11/5/03); Ord. 86 (12/10/91).

Title 11 – Utilities
Chapter 6 – Private Water and Sewer Systems

Sec.

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Legislative History

Enacted:

Codifying Title 11, Ord. 195 (11/5/03), BIA (11/25/03).

Repealed or Superseded:

Health and Sanitation Code, Ord. 90 (2/6/92), BIA (2/18/92) (Chapter 1 "Definitions," Chapter 2 "Domestic Water Sources" and Chapter 3 "Sewage Disposal Facilities").
Swinomish Indian Tribal Community Utility Ordinance, Ord. 65, Art. V & VII (10/10/89), Enacting Res. 89-10-95, BIA (10/23/89).

11.06.010 Definitions.

(A) **"Board of Health"** means the Chair of the Swinomish Senate and the Chair of Vice-Chair of the Health, Education, and Social Services Committee.

(B) **"Health Administrator"** means the Director of the Swinomish Tribal Health Program or his/her authorized representative(s).

(C) **"Manager"** means the manager of the Utility Authority established under the terms of this Title.

(D) **"Planning Department"** means the Office of Planning and Community Development of the Swinomish Indian Tribal Community.

(E) **"Public Health Service Recommended Standards"** means official publications of the U.S. Public Health Service.

(F) **"Sanitarian"** means the Indian Health Service Environmental Health professional stationed at the Northwest Washington Service Unit.

(G) **"Sewage Disposal System"** means any individual or community installation constructed for the purpose of treatment and disposal of human wastes, including but not limited to: septic tanks, drain fields, service lines, sewer mains, interceptor lines, and interior plumbing.

(H) **"Water Supply and Distribution"** means any individual or community installation constructed for the purpose of providing potable water to a residence, place of business or other facility, including but not limited to: distribution mains, service lines, wells, and interior plumbing.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

Subchapter I – Connecting to the Public Sewer

11-06.020 Runoff.

(A) **Surface and Groundwater.** No drain of any kind that carries surface or groundwater runoff shall be connected to the public sewer.

(B) **Buildings.** No person shall make connection of roof downspouts, exterior foundation drains, areaway drains, or other sources of surface runoff or ground water to a building sewer or building drain that in turn is connected directly or indirectly to a public sanitary sewer.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.030 Connection to Public Sewer.

(A) **Inside Area Served by Authority**. Owners of real property or the beneficial owners of real property within the area served by the public sewage disposal system shall connect any toilets on their property to the public sewer when the nearest property line on their lot is within 200 feet of a sewer line.

(B) **Outside Area Served by Authority.** Owners of real property or the beneficial owners of real property that is not within an area served by the public sewage disposal system or where a property line is not within 200 feet of a public sewer shall construct a private sewage disposal system.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.040 Construction and Repair.

(A) Any building or structure hereafter constructed or made available for human occupation and use for any purpose shall, when required by this Section, be connected to a public sewer of the Authority before the completion of the construction of such building or structure or before any occupancy or use thereof, or (in the event that a public sewer capable of serving that building or structure has not been completed by the Authority prior to the construction or occupancy of such buildings or structure) within sixty (60) days after written notification from the Authority as aforesaid, whichever event first occurs.

(B) Any needed repair to a building sewer or connection to a public sewer shall be made within sixty (60) days after the date of mailing or personal service of a notice by the manager to the owner of the property served notifying such owner to make such repair. In the event of any emergency, the Authority may establish a shorter period of time for the repair to be made or, if the owner cannot be located or does not promptly make such repairs, the Authority may make the repairs at the expense and risk of the owner.

(C) If any connection to a public sewer, or if any needed repair to a building sewer or connection to a public sewer, shall not be made within the time and in the manner provided in this Section, the Authority may forthwith apply to the Tribal Court for an order causing such connection or repair to be made by the Authority. Such order may be issued only after proper notice served to the owner stating that there will be a hearing before the Court on the matter. If the owner cannot be located, this notice may be affixed to the building in question.

(D) Upon making the necessary connection or repair, the Authority shall certify the amount of the cost of making such connection or repairs and may also file a declaration of lien with the Planning Department, the Auditor of Skagit County, and/or with the Puget Sound Agency, Bureau of Indian Affairs, Department of the Interior. Upon such filing, the cost, together with a penalty of fifteen percent (15%) of the cost plus interest at one percent (1%) per month, upon the one hundred fifteen percent (115%) amount, compounded annually shall become a lien against the property.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.050 New Construction.

(A) **Conditions.** As a condition to receiving a permit for new construction, the permittee shall agree to:

(1) Connect to the public sewer as soon as the same becomes available for connection;

(2) Participate in, support, and become a part of any Reservation Utility Improvement District that shall be formed to serve the property or any part thereof; and

(3) Pay any and all charges associated with the extension of the sewer system to the property or any part thereof.

(B) **Writing.** The applicant's agreement to the above conditions shall be written and signed.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.060 Building Sewers and Connections: Permits.

(A) No person other than an authorized representative of the Authority shall uncover, make any connections with or opening into, use, alter or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the Manager.

(B) There shall be three classes of building sewer permits: (1) Residential; (2) Commercial; and (3) Industrial. In each case, the owner or his or her agent shall make application on a special permit form furnished by the Authority. The permit application shall be supplemented by any plans, specifications or other information considered pertinent in the judgment of the Manager. A permit and inspection fee shall be paid to the Authority at the time the application is filed.

(C) All costs and expenses incident to the installation and connection of the building sewer shall be borne by the owner. The owner shall indemnify the Authority from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.070 Building Sewers and Connections: Engineering.

(A) A separate and independent building sewer shall be provided for every building unless otherwise approved by the Manager prior to construction of such building sewer.

(B) Old building sewers, including septic tank lines, may be used in connection with new buildings only when they are found, on examination and test by the Manager, to meet all requirements of this Chapter.

(C) The size, slope, alignment, and materials of a building sewer, and the methods to be used in excavating, placing the pipe, jointing, testing, and backfilling the trench, shall all conform to the specifications of the Authority.

(D) Whenever possible, the building sewer shall be brought to the building at an elevation below the basement floor. In all buildings in which any building drain is too low to permit gravity flow to the public sewer, sanitary sewage carried by such building drain shall be lifted by an approved means and discharged to the public sewer at the owner's expense.

(E) The connection of the building sewer into the public sewer shall conform to the specifications promulgated or adopted by the Authority. All such connections shall be gastight and watertight. Any deviation from the prescribed procedures and materials must be approved by the Manager before installation.

(F) The applicant for the building sewer permit shall notify the Manager when the building sewer is ready for inspection and connection to the public sewer. The connection shall be made under the supervision of the Manager or his/her representative.

(G) All excavations for building sewer installations shall be adequately guarded with barricades and lights to protect the public from hazard. Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the Manager or his or her representative.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.080 Building Sewers and Connections: Disconnection.

No structure may be disconnected from a building sewer and no building sewer may be disconnected from a public sewer for any reason without prior written notification to, and approval of, the Manager or his or her representative.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.090 Proscribed Discharge.

(A) No person shall discharge or cause to be discharged any storm water, surface water, roof runoff, subsurface drainage, cooling water or industrial process waters to any sanitary sewer.

(B) Except as hereinafter provided, no person shall discharge or cause to be discharged any of the following described waters or wastes to any public sewer:

(1) Any liquid or vapor having a temperature higher than one hundred fifty degrees Fahrenheit (150 F.°);

(2) Any water or waste that may contain more than 30 parts per million (30 ppm), by weight, of fat, oil or grease;

(3) Any gasoline, benzene, naphtha, fuel oil, lube oil or other flammable or explosive liquid, solid or gas;

(4) Any organic garbage that has not been properly shredded;

(5) Any solid or viscous substance capable of causing obstruction to the flow in sewers or other interference with the proper operation of the sewer works including but not limited to ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, or paunch manure;

(6) Any waters or wastes having a pH lower than 5.5 or higher than 9.0, or having any other corrosive property capable of causing damage or hazard to the structures, equipment or personnel of the Authority;

(7) Any waters or wastes containing toxic or poisonous substances in sufficient quantity to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, or create any hazard in the receiving waters or at the disposal site of the sewage treatment plant;

(8) Any waters or wastes containing suspended solids of such character and quantity, or of such excessive organic loads, that unusual attention or expense is required to handle such materials at the sewage treatment plant; or

(9) Any noxious or malodorous gas or substance capable of creating a public nuisance.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.100 Grease, Oil, and Sand Separators.

(A) Grease, oil and sand solids separators shall be provided when, in the opinion of the Manager, they are necessary for the handling of liquid wastes containing grease in excessive amounts, or any flammable wastes, sand and other harmful ingredients. Such separators shall be of a type and capacity approved by the Manager and shall be so located as to be readily and easily accessible for cleaning and inspection. Grease and oil separators shall be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature. They shall be of substantial construction, watertight, and equipped with easily removable covers that, when bolted in place, shall be gastight and watertight.

(B) Where installed, all grease, oil and sand solids separators shall be maintained by the owner, at his or her expense, for continuously efficient operation at all times. A record of such maintenance shall be furnished to the Manager upon request.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.110 Discharge Subject to Review.

The introduction into the public sewer of any waters or wastes with the following characteristics shall be subject to the review and approval of the Manager:

(A) A five-day B.O.D. greater than 300 parts per million (300 ppm) by weight;

(B) More than 250 parts per million (250 ppm) by weight of suspended solids;

(C) Any quantity of a substance having the characteristics described in Section 11-06.090(B).

(D) Any average daily flow greater than two percent (2%) of the average daily sewage flow of the Authority; or

(E) Any other substance or practice that is prohibited or regulated by the rules and regulations of the Authority as presently existing or hereafter amended.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.120 Preliminary Treatment.

(A) Where necessary in the opinion of the Manager, the owner shall provide, at his or her expense, such preliminary treatment as may be necessary to:

(1) Reduce the B.O.D. to 300 million parts by weight, and the suspended solids to 250 parts per million by weight;

(2) Reduce objectionable characteristics or constituents to within the maximum limits provided for in Section 11-06.090(B);

(3) Control the quantities and rates of discharge of such water or wastes; or

(4) Comply with any other restrictions imposed by the Authority.

(B) Plans, specifications and other pertinent information relating to proposed preliminary treatment facilities shall be submitted for the approval of the Manager and the appropriate federal agencies when required by law, and no person shall commence construction of such facilities until such person obtains approval from the Manager in writing. Any expenses incurred by the Authority in reviewing such plans, specifications and information shall be paid by the property owner or his or her representative before the Authority shall issue its approval.

(C) Where preliminary treatment facilities are provided for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at his or her expense.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.130 Control Manhole.

When required by the Manager, the owner of any property served by a building sewer carrying industrial wastes shall install a suitable control manhole in the building sewer to facilitate observation, sampling and measurement of the wastes. Such manhole, when

required, shall be accessible and safely located, and shall be constructed in accordance with plans approved by the Manager. The manhole shall be installed and maintained by the owner at his or her expense so as to be safe and accessible at all times.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.140 Measurements, Tests, and Analyses.

All measurements, tests and analyses of the characteristics of waters and wastes to which reference is made in Section 11-06.090(B) and Section 11-06.110 shall be determined in accordance with "Standard Methods for the Examination of Water and Wastewater," and shall be determined at the control manhole provided for in Section 11-06.130, or upon suitable samples taken at such control manhole. In the event that no special manhole has been required, the control manhole shall be the nearest downstream manhole in the public sewer from the point at which the building sewer is connected.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.150 Industrial Waste.

Nothing in this Chapter shall be construed as preventing any special agreement or arrangement between the Authority and the producer of any industrial waste whereby industrial waste of unusual strength or character may be accepted by the Authority for treatment, subject to payment by the producer.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.160 Other Restrictions and Requirements.

The Authority shall adopt other restrictions and requirements for the use of the public sewers as in its judgment are wise and prudent for the system.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

Subchapter II – Private Sewers

11-06.170 General Requirements.

Except as hereinafter provided in this Chapter, it shall be unlawful to construct or maintain any privy, septic tank, cesspool or other facility intended or used for the disposal of sewage.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.180 Discharge Permits Required.

It shall be unlawful for any person to discharge sewage, industrial wastes, or other polluted waters without a permit upon any property or into any watercourse within the exterior boundaries of the reservation or in any area under the jurisdiction of the Authority.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.190 Connection to Public Sewer.

(A) Where a public sanitary sewer is not available for use as provided in Section 11-06.030, the building sewer shall be connected to a private sewage disposal system, which must comply with the terms and conditions of this Section.

(B) At such time as a public sewer becomes available to a property served by a private sewage disposal system, a direct connection shall be made to the public sewer in compliance with this Chapter. Such connection shall be made within sixty (60) days and the private sewage disposal system shall be cleaned of sludge and filled with clean bank-run gravel or dirt.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92); Ord. 65 (10/10/89).

11-06.200 Permit for New Construction.

(A) No person shall construct, alter, extend or connect to an individual septic tank, lagoon, cesspool system or community sewage system unless he or she holds a valid permit issued by the Health Administrator for the specific construction.

(B) Applications for permits shall be in writing, be signed by the applicant and include the following:

(1) Name, address and phone number of the applicant.

(2) Location of the proposed construction.

(3) Plans and specifications for the proposed facilities.

(4) Location of the water supplies, piping, existing facilities, buildings or proposed buildings and wells.

(5) Results of soil percolation tests and location of test holes and date of testing.

(C) The Health Administrator may require the applicant to submit additional information that he or she may deem necessary.

(D) Applications shall be reviewed by: (1) the Planning Department; and (2) the Health Administrator; in consultation with the Sanitarian, who shall make written recommendations before granting the construction permit.

(E) The applicant shall pay a permit and inspection fee to the Tribe at the time the application is filed.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92); Ord. 65 (10/10/89).

11-06.210 Comprehensive Plan.

All new construction shall comply with the Comprehensive Plan, Zoning Code, other applicable provisions of the Swinomish Tribal Code, and any rules and regulations promulgated thereunder.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-06.220 Inspection.

All new connections shall be inspected and approved by the Health Administrator or Sanitarian before being placed into service.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-06.230 Public Health Service Standards.

(A) The type, capacities, location, and layout of a private sewage disposal system shall comply with all Public Health Service Recommended Standards. No septic tank or cesspool shall be permitted to discharge to any wetlands, water body, or water course.

(B) It shall be a violation of this Chapter for any person to construct, operate or maintain a sewage disposal system on the Reservation that fails to meet the Public Health Service recommended standards on file with the Health Administrator. This section shall not prohibit the use of gray water disposal systems as approved by the Health Administrator and Health Sanitarian.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92); Ord. 65 (10/10/89).

11-06.240 Operations and Maintenance.

The owner shall operate and maintain the private sewage disposal facilities in a sanitary manner at all time, at no expense to the Tribe.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.250 Additional Requirements.

No statement contained in this Chapter shall be construed to interfere with any additional requirements that may be imposed by the Health Administrator.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.260 Disposal of Privy and Septic Tank Contents.

Materials from any individual sewage disposal system shall be collected, transported, and disposed of in a manner approved by the Health Administrator. Permits for septic tank pumper operators shall be required by the Planning Department and shall be renewed on an annual basis. However, a county pumping permit shall be considered adequate.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-06.270 Time Allowed for Corrections of Violations.

Any violation of this Chapter must be corrected within forty-eight (48) hours.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

Subchapter III – Private Water Supply

11-06.280 Connection to Community Water Systems.

The Health Administrator or the Planning Director shall refuse to grant a permit for construction of an individual water system where adequate community water system distribution lines are within 200 feet of the property line of the premise to be served.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-06.290 Public Health Service Standards.

It shall be a violation of this Chapter for any person to construct, operate, or maintain a domestic water source on the Reservation that is not adequately protected against contamination and in compliance with the Public Health Service recommended standards on file with the Planning Department.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-06.300 Construction Permit.

(A) **Required.** It shall be a violation of this Chapter for any person to construct, alter or extend a water supply and distribution system on the Reservation without a

valid permit issued by the Health Administrator for the specific construction.

(B) **Applications.** Application for permits shall be in writing, signed by the applicant, and include the following:

(1) Name, address and phone number of the applicant;

(2) Location of the proposed construction; and

(3) Plans and specifications for the proposed facilities;

(C) **Review.** Applications shall be reviewed by the Health Administrator in consultation with the Sanitarian. The Health Administrator and Sanitarian shall make written recommendations before approving the construction.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-06.310 Zoning Permit.

All construction shall also be subject to the provisions of Title 20, Land Use and Zoning, of the Swinomish Tribal Code, including zoning permits where applicable. Approval of the Planning Department will be required before construction permits can be issued.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-06.320 Inspection.

All water supply and distribution construction shall be inspected and approved by the Health Administrator or Sanitarian before being placed in service.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-06.330 Hazardous Installations Prohibited.

No person shall install or maintain fixtures, equipment or devices that provide a cross-connection or allow backflow into a community or individual water supply. Public Health Service recommended standards, which are on file with the Planning Department shall be followed.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

Subchapter IV -- Sewer and Water Line Contractors

11-06.340 License Required.

For the purpose of assuring safe and high quality construction of building sewers, water lines, and connections to the public sewers and water lines of the Authority, and of affording satisfactory protection to the sewer or water line users of the Authority, no person, other than the owner of the property involved, may construct, install, repair, reconstruct, excavate or connect to the public sewers or water lines of the Authority any building sewer or water line, unless he or she is a side sewer or water line contractor holding a valid license from the Authority.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.350 Application.

The Authority shall issue building sewer or water line contractor licenses based on information contained on the application and obtained from other reliable sources relating to the experience, ability to perform the necessary work, and reputation of the applicant. All applicants for the license shall complete an application furnished by the Authority that shall require the applicant to furnish information relating to his or her experience, ability to perform building sewer or water line work, and personal, financial, and previous work references. The application may be in the form of a contract whereby the applicant shall agree to abide by the building sewer and side sewer or water line contractor requirements of this Title.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.360 Bond and Insurance.

(A) Every applicant for a license must:

(1) Deposit with the Authority a surety bond in favor of the Authority in the amount of five thousand dollars ($5,000.00) with a surety or sureties thereon approved by the Authority and conditioned on the applicant's performance of the obligations of the application or contract (if the application is in contract form) and the resolutions and requirements of the Authority relating to building sewers or water line contractors, and

(2) Provide satisfactory proof that the applicant currently carries the following insurance coverage:

(a) Public liability insurance in an amount not less than fifty thousand dollars ($50,000.00) for injuries and accidental death to any one

person, and an amount not less than one hundred thousand dollars ($100,000.00) for any one accident; and

(b) Property damage and fire insurance in an amount not less than twenty-five thousand dollars ($25,000.00).

(B) As long as a side sewer or water line contractor has a license, he or she shall maintain such bond and insurance, and such additional limits as may be required from time to time, and shall furnish proof thereof to the Authority whenever required by the Manager.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.370 Responsibilities.

Every licensed building sewer or water line contractor shall:

(A) Post a valid building sewer or water line permit at the site of the work prior to commencing the work relating thereto;

(B) Contract for work using only the standard form of building sewer or water line contract approved by the Authority, executed in duplicate or more copies, which shall provide:

(1) A clear description, including a sketch, of the work to be performed and the materials to be used; and

(2) A statement that workmanship and materials shall be guaranteed for a period of one (1) year after installation and acceptance thereof; and

(C) Adhere at all times to the current requirements of the Authority for building sewer or water line contractors, including such reasonable requirements relating to construction, installation, reconstruction and repair the Manager may impose from time to time.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.380 License Revocation, Suspension.

(A) The license of a building sewer or water line contractor may be revoked or temporarily suspended by the Manager until the next meeting of the Commission for any one (1) of the following causes:

(1) Fraud or misrepresentation in applying for or maintaining the license;

(2) Failure to observe the rules and regulations of the Authority relating to

building sewers or water line contractors;

(3) Failure to pay for labor or materials used in the construction of building sewers or water lines;

(4) Fraud or misrepresentation to the owner, occupant or agent or representative thereof for the purpose of obtaining a contract for the construction of a building sewer or water line, or during the course of work done pursuant to such a contract, and including the failure to adhere to the standard building sewer or water line contract;

(5) Failure to correct work or pay any default covered by the guarantee in the standard building sewer or water line contract;

(6) Failure to pay for work performed by the Manager or Authority, or caused to be performed thereby, for which the contractor may be liable; or

(7) Failure to maintain, or, when requested, prove, the maintenance of the surety bond and insurance required by this Chapter.

(B) Prior to the meeting of the Commission at which action or revocation of a license will be taken, the contractor shall be notified and shall be afforded an opportunity to be heard by the Commission at that meeting. If the license is revoked or suspended, the contractor must forthwith cease any building sewer or water line construction work being performed within the jurisdiction of the Authority.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

11-06.390 License Renewal.

The building sewer or water line contractor's license may be renewed annually by application as aforesaid and satisfaction of the requirements of this Chapter.

[History] Ord. 195 (11/5/03); Ord. 65 (10/10/89).

Title 11 – Utilities
Chapter 7 – Solid Waste

Sec.

11-07.010 Definitions
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11-07.060 Draining of Garbage
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11-07.100 Collection of Solid Waste
11-07.110 Collection Vehicle Standards
11-07.120 Solid Waste Collection Schedule
11-07.130 No Solid Waste Disposal Sites
11-07.140 Solid Waste Production, Transportation, and Disposal

Legislative History

Enacted:

Codifying Title 11, Ord. 195 (11/5/03), BIA (11/25/03).

Repealed or Superseded:

Defining "Swinomish Village" and Prohibiting Dangerous Dogs, Ord. 144, Section 1 (11/8/00), BIA (11/27/00) (amending Ord. 90, as amended)
Health and Sanitation Code, Ord. 90 (2/6/92), BIA (2/18/92) (repealing and superseding Res. 76-7-399, Res. 81-1-794, and Res. 81-2-801).
Swinomish Indian Tribal Utility Ordinance, Ord. 65, Art. VIII Solid Waste Service (10/10/89), Enacting Res. 89-10-95, BIA (10/23/89).
Interim Health and Sanitation Code, Res. 81-2-801 (2/26/81) (adopting the Interim Health and Sanitation Code).
Health and Sanitation Code, Res. 81-1-794 (1/5/81).
Delegating authority to the Sanitation and Inspection Committee, Ord. 12 (4/28/41).
Regulating the Disposal of Garbage, Ord. 3, BIA (10/13/36).

Noted:

Applying State Health and Education Laws and Regulations to the Reservation, Res. 96A (12/2/55).

[Ed. Note. The state health and education laws of 1955 included laws regarding solid waste.]

11-07.010 Definitions.

(A) For the purposes of this Chapter, unless explicitly stated otherwise, the following terms shall have the following meanings:

(1) **"Garbage"** means putrescible animal and vegetable wastes resulting from the preparation, cooking and consumption of food including but not limited to: wastes from markets, storage facilities, handling and sale of produce and other food products.

(2) **"Health Administrator"** means the Director of the Swinomish Tribal Health Program or his/her authorized representative(s).

(3) **"Planning Department"** means the Office of Planning and Community Development, the tribal organization responsible for all land-use planning and zoning within the exterior boundaries of the Reservation.

(4) **"Public Health Service Recommended Standards"** means official publications of the U.S. Public Health Service.

(5) **"Public Nuisance"** means any activity that arises from unreasonable, unwarranted, or unlawful use of private property and results in a material annoyance, inconvenience, discomfort, or health hazard.

(6) **"Putrescible Wastes"** means discarded materials of an organic composition that decompose or rot to form foul-smelling products.

(7) **"Rubbish"** means all non-putrescible wastes, except ashes, including but not limited to cans, paper, glass, wood, and scrap metal.

(8) **"Sanitarian"** means the Indian Health Service Environmental Health professional stationed at the Northwest Washington Service Unit.

(9) **"Solid Wastes and Refuse"** means all putrescible and non-putrescible discarded solid and semi-solid materials including but not limited to: garbage, household hazardous wastes, rubbish, ashes, dead animals, abandoned vehicles and machinery, construction, demolition, and industrial wastes. It does not include sewage, hazardous waste, irrigation return flows, or industrial discharges that would be defined as point sources under the U.S. Clean Water Act.

(10) **"Village," "the Village area,"** or **"Swinomish Village"** means the area consisting of all of Swinomish Allotment T38-F, all of Swinomish Allotment T1005, and a portion of Swinomish Allotment T1003, and having the following legal description:

Swinomish Allotment T38-F:
The North ½ of the Northeast ¼ of the Northwest ¼ of the Southwest ¼ of Section 36, Township 34 North, Range 2 East, W.M., Skagit County,Washington

Swinomish Allotment T1005:
The Southeast ¼ of the Southwest ¼ of the Northwest ¼ of Section 36, Township 34 North, Range 2 East, W.M., Skagit County, Washington, except the north twenty (20) feet thereof.

A Portion of Swinomish Allotment T1003:
Government lots 7, 8 and 9 of Section 36, Township 34 North, Range 2 East, W.M., Skagit County, Washington; except that portion of Government Lot 9 lying southwesterly of the southwesterly line of the road right-of-way granted to Skagit County on June 6, 1955, and recorded as Document No. 122-222 in the records of the Bureau of Indian Affairs, Portland, Oregon. There is excepted from said parcel the following portion of Govt. Lot 9, beginning at the northwest corner of Govt. Lot 9, thence easterly along the North line of said Govt. Lot 9, a distance of 150 feet; thence southerly along a line parallel to and 150 feet distant from the West line of said Govt. Lot 9, a distance of 100 feet; thence westerly along a line parallel to and 100 feet distant from the North line of said Govt. Lot 9, a distance of 150 feet to the West line of said Govt. Lot 9; thence northerly along the said West line, a distance of 100 feet to the point of beginning.

(B) All other terms, unless explicitly stated otherwise, shall have their ordinary and customary meanings.

[History] Ord. 195 (11/5/03); Ord. 144 (11/8/00); Ord. 90 (2/6/92);

11-07.020 Illegal Dumping.

(A) It shall be unlawful for any person or persons to unload solid waste any place within the exterior boundaries of the Reservation, other than the place or places designated by the Senate.

(B) It shall be unlawful to dump refrigerators, ice boxes, and other appliances with movable doors anywhere within the exterior boundaries of the Reservation. Dumping of such appliances shall be punished to the full extent provided by law because children may play in the appliances and become entrapped.

(C) **Penalties.**

All persons who violate this Section shall be subject to the following penalties:

(1) A civil fine of up to five hundred dollars ($500) per violation;

(2) Each day the person remains in violation shall constitute a separate offense, punishable by up to $100 per day; and

(3) Clean up costs.

[History] Ord. 195 (11/5/03); Ord. 3 (no date); BIA (10/13/36).

11-07.030 Sanitary Storage.

All solid waste shall be stored so that it does not:

(A) Attract rats, flies, mosquitoes, or other disease-carriers; and

(B) Constitute a safety hazard or a public nuisance.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-07.040 Storage Container Standards.

(A) Individual cans for outside storage of solid waste shall be made of rust-and-corrosion resistant metal (or equivalent heavy-duty plastic), of water-tight, leak-proof and weather-proof construction, and equipped with tight-fitting insect and rodent-proof lids.

(B) 55-gallon oil drums are strictly prohibited as solid waste storage containers.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-07.050 Sufficient Storage Containers.

Each residence or place of business shall have a sufficient number of approved outdoor containers to accommodate all solid waste materials accumulated between collections.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-07.060 Draining of Garbage.

Garbage shall be drained and wrapped before being placed in storage containers.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-07.070 Placement of Outdoor Storage Containers.

Unless containers are placed on a smooth, impervious surface, storage racks or container

supports shall be provided for individual containers to minimize corrosion and to prevent breeding of insects and harboring of rodents.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-07.080 Temporary Storage of Certain Rubbish.

Certain types of rubbish may be temporarily stored in a manner other than containerization. Such rubbish includes bundled brush, bundled newspapers, packing cases, and other similar materials that may be handled by the collection vehicle. These materials shall not be placed out for collection more than twenty-four (24) hours before the scheduled pick-up.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-07.090 Junk Automobiles and Similar Refuse.

Junk automobiles, appliances, mobile homes, campers, boats, travel trailers, and similar materials shall not be allowed to accumulate on the premises. The owners shall be responsible for the disposal of this type of solid waste material in a manner acceptable to the Health Administrator, such as arranging for a salvage company to remove it from the Reservation.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-07.100 Collection of Solid Waste.

Solid Waste collection and disposal services in the Village Area shall be managed and provided for a fee by the Utility Authority. The Utility Authority may contract with a private company for solid waste collection and disposal services.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92); Ord. 65 (10/23/89).

11-07.110 Collection Vehicle Standards.

The collection of solid waste shall be by means of covered vehicles of such construction as to be readily cleanable and to prevent spillage of refuse during loading and transporting to the disposal area. Collection vehicles are to be emptied at the end of each working day. Refuse should not be allowed to carry over from one day to the next.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-07.120 Solid Waste Collection Schedule.

Solid waste shall be collected and disposed of at a frequency sufficient to prevent public nuisances and health hazards.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-07.130 No Solid Waste Disposal Sites.

No solid waste disposal sites shall be allowed within the exterior boundaries of the Reservation.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

11-07.140 Solid Waste Production, Transportation, and Disposal.

(A) **Liability.** Any person who produces, transports, accepts, or disposes of solid waste on the Reservation in any manner, or participates or acquiesces in the same with some other person, shall be liable to the Tribe for all costs of remediation, including but not limited to:

(1) Clean-up costs;

(2) Court costs; and

(3) Enforcement costs.

(B) **Defenses.** No liability shall attach if the potentially liable party can prove, by a preponderance of the evidence, that his or her production, transportation, acceptance, or disposal of the solid waste was due to:

(1) An act of God;

(2) An act of war; or

(3) An act or omission of a third party, other than an employee or agent of the potentially liable party, or a third party with whom the potentially liable party had a contractual relationship.

[History] Ord. 195 (11/5/03); Ord. 90 (2/6/92).

Water Line Extension Agreement
Between
Swinomish Utility Authority (SUA)
And
(Name of Customer)

The Swinomish Indian Tribal Utility Authority (hereinafter the "Authority") under the authority granted by the Swinomish Indian Tribal Community, a federally recognized Indian Tribe organized pursuant to Section 16 of the Indian Reorganization Act of 1934 (25 U.S.C. 476) (hereinafter the "Tribe") and _____ (hereinafter the "Customer") enter into the following agreement (hereinafter the "Agreement") and make the following mutual promises and covenants as consideration for the Authority's providing water service to the Customer.

1. PURPOSE. This agreement is entered into as a means to facilitate the issuance of necessary permits from appropriate Tribal and other agencies for construction of a water main extension as part of the Swinomish public water supply system. This agreement defines the responsibilities of the Customer and the Authority in the construction, management and ongoing operation of the water main extension.

2. RESPONSIBILITIES OF THE CUSTOMER.

A. Payment of Design Fees. Customer has previously paid all design costs to (engineering firm name) to produce plans and specifications for this project. The aforementioned plans and specifications titled (insert plan title) dated _____ _____ have been approved by Authority.

B. Payment of Construction Costs. The Customer has obtained a bid for construction costs for this project from (name of contractor) in the amount of (insert amount of contract - USD). Customer agrees to deposit with the Authority the amount of the bid with the Authority upon execution of this Agreement for the purpose of allowing the Authority to enter into a construction contract for the improvements with (insert name of contractor).

C. Restrictions. Initially, the water main extension to be built by the Authority will provide domestic water service to the residential lot located at

(insert address) situated on the Swinomish Indian Reservation, Skagit County, Washington. Additional residential connections to this extension will be at the discretion of the Authority. If the Authority allows additional residential connections to the proposed extension, then the Customer may be eligible for a reimbursement for a portion of his total costs as described under "Responsibilities of the Authority".

D. Operations and Maintenance Fees. The Customer will pay to the Authority, in addition to the construction cost of the improvements, the monthly operations and maintenance fees applicable to all other customers of the system in a similar class upon delivery of water service.

3. RESPONSIBILITY OF THE AUTHORITY.

A. Construction of Improvements. Upon payment of the bid amount described in Section 2.B. by the Customer the Authority will complete the construction in accordance with the terms of this Agreement and the approved plans and specifications described in Section 2.A. If the cost to construct the improvements exceeds the bid submitted by Larry Brown Construction, Inc. the Authority agrees to pay for such cost overruns.

B. Inspection of Improvements. The Authority shall cause inspection of the improvements to be performed in accordance with the Engineer's plans and specifications and this Agreement.

C. Construction Schedule. Within (insert #) days after payment of the construction cost estimate by the Customer the Authority will complete the construction of the proposed improvements so that the residential lot to be served by these improvements has a potable water supply suitable for normal residential use.

D. Maintenance and Repair. The Authority agrees to operate and maintain the improvements in a satisfactory manner, including all necessary repairs.

E. Future Connections to the Water Line Extension. The Authority agrees to reimburse to the Customer a portion of his total construction costs from future connection fees to the proposed extension in the manner described below in Section E.1., E.2., E.3. and E.4. This reimbursement provision is in effect for five (5) years after the acceptance of the constructed water line by the Authority. After five (5) years from the acceptance of the constructed water line the Authority is not obligated to reimburse water line connection fees to the Customer. If the actual cost of the extension is less than the construction bid paid by the Customer, then the Authority will refund the difference to the Customer within 30 days after the final accounting for the extension.

1. First, the Authority will retain any amounts from future late comers fees on this extension to cover cost overruns of the extension and other

engineering/construction costs related to future connections on this extension;

2. Second, after the Authority has collected any fees rightfully due from future late comers fees to cover costs related to future connections and cost overruns of this extension the Authority will remit back to the Customer an amount so that the Customer's net cost for construction of this extension does not exceed $(insert amount). The Authority will not be obligated to pay any interest costs or other costs of lost opportunity of money to the Customer.

3. It is assumed that a total of (insert number) residential connections can be made to this extension, including the (customer name). Therefore, additional residential connections to this extension within five years from acceptance of this extension by the Authority will pay $(insert amount) (insert % of construction cost) to the Authority in addition to Authority connection fees. The Authority will forward the $(insert amount) payment(s) to (name of customer) within 30 days of receipt of such payment(s).

4. If more than (insert number) residential connections are made to this extension, including additional extensions, within the aforementioned five year late comers fees time period, then the late comer fees will be re-apportioned so that each connection pays its subsequent equal percentage of the construction cost.

4. NON-WAIVER. Failure of either party to insist on the strict performance of any of the terms of this agreement shall not be construed as a waiver or relinquishment of that party's right thereafter to strictly enforce any term, but the same shall continue in full force and effect.

5. VENUE AND ATTORNEY FEES. In the event that either party shall commence litigation against the other in order to enforce any terms or conditions of this Agreement the parties agree that the Court of Jurisdiction shall be the Swinomish Tribal Court and that the prevailing party in such litigation shall be entitled to recover its costs, including reasonable attorneys' fees.

AGREED TO THIS _____ day of _____, 20__.

_____ _____

(Customer) Notary

_____ _____

John Petrich, SUA Manager Notary

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PERMIT

TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
November 5, 1979	G1-23501	G1-23501 P	

NAME
Kwonesum Associates c/o Mr. Kirby Johnson

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
P.O. Box 447	La Conner	Washington	98257

The applicant is, pursuant to the Report of Examination which has been accepted by the applicant, hereby granted a permit to appropriate the following described public waters of the State of Washington, subject to existing rights and to the limitations and provisions set out herein.

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
Well

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
	20	12.0

QUANTITY, TYPE OF USE, PERIOD OF USE
Community domestic supply - continuously (24 homes)

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION--WITHDRAWAL
1200' west and 150' north of the south quarter corner of Section 24.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
SE¼ SW¼	24	34	2 E	3	Skagit

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

The north 261 feet of the south 418 feet of that portion of the SW¼ SW¼ and Government Lot 10 of Section 24, Township 34 north, Range 2 east, W.M. lying east of that certain 60 foot wide county road commonly known as Reservation Road as the same is built and exists on the ground and as said road is set forth in deed dated June 29, 1967, and recorded August 22, 1967, under Auditor's File No. 703499, records of Skagit County, State of Washington.

DESCRIPTION OF PROPOSED WORKS

Well 6" X 70'; SWL recorded as 40.0'; 1.5 HP submersible jacuzzi pump model 15S4C set with intake at well depth of 64.0'; 20,000 gallon reservoir and 6" PVC mainline; note intake is about 76.0' above MSL.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE	WATER PUT TO FULL USE BY THIS DATE
Complete	Complete	February 28, ~~1995~~ ~~2000~~ 2005

PROVISIONS

This authorization to make use of public waters of the State is subject to existing rights, including any existing rights held by the United States for the benefit of Indians under treaty or otherwise.

An approved measuring device shall be installed and maintained in accordance with RCW 90.03.360, WAC 508-64-020 through WAC 508-64-040 (Installation, operation and maintenance requirements attached hereto). Meter readings shall be recorded monthly and this data shall be maintained and be made available to the Department of Ecology upon request.

This permit is subject to the implementation of the minimum requirements established in the Interim Guidelines for Public Water Systems Regarding Water Use Reporting, Demand Forecasting Methodology and Conservation Programs, July 1990.

Static water level (SWL) shall be measured at least once each month. Measurements shall be taken after the pump has been shut off and the water level in the well has been stabilized. The data shall be maintained and made available to Ecology upon request. However, Ecology's Water Resources Section (NWRO) shall be notified if the SWL is determined to be below the level normally recorded at that time of year.

The certificate of water right will be issued after all conditions of water system approval and any other federal or tribal requirements are fulfilled.

This water system shall be connected to a "regional water system" as described in RCW 90.54.020(7) when one becomes available.

This permit shall be subject to cancellation should the permittee fail to comply with the above development schedule and/or fail to give notice to the Department of Ecology on forms provided by that Department documenting such compliance.

Given under my hand and the seal of this office at Bellevue, Washington,

this 28th day of February, 1994.

Department of Ecology

ENGINEERING DATA
OK ETG

by Stephen J. Hirschey
Stephen J. Hirschey, Section Supervisor, Water Resources

System Sampling Plans

Swinomish Utility Authority Water System

System Information

System Name	Swinomish Utility Authority Water System.
System Classification	Swinomish Tribal Community system is a Community Water System.
ID #	PWS# 105300032
Source Type	The Swinomish Utility Authority Water System is supplied by the City of Anacortes with treated surface water from the Skagit River under a long term contract. The Tribe also has 2 separate groundwater wells, named wells #2 (AET020) and #3 (AET021)on the Reservation which can be used in the event of an emergency. A well log has been identified for Well #2 – Well log #84911.
Population Served	The Swinomish Utility Authority Water System serves approximately 850-900 persons.
Service Connection	The Swinomish Utility Authority Water System presently has approximately 370 residential and tribal office connections and one commercial connection.
Daily Production	Typical production at Swinomish Utility Authority Water System ranges 65,000 gap to 70,000 gpd and increases to 90,000 gpd to 95,000 gpd when the fish plant is in operation. Peak usage is about 2.2 MG per month.
Introduction	The Swinomish Utility Authority Water System serves Indian and non-Indian customers on the Swinomish Indian Reservation near LaConner, WA.
Source	The Swinomish Utility Authority Water System is supplied by water purchased from the City of Anacortes WA. Anacortes treats surface water from the Skagit River near Mount Vernon, WA and supplies the City of LaConner, City of Oak Harbor, Naval Air Station Whidby Island and other wholesale and retail customers in western Skagit and northern Island Counties. The CWS has two back-up groundwater wells, used only in emergencies. The booster pumps supplying the system are controlled by PLC and phone line telemetry from the reservoir to the pump house at the intake site adjacent to the wells.
Treatment - Disinfection	Disinfection is accomplished by the City of Anacortes.
Storage: Reservoir	Storage is provided by 2 concrete reservoirs: 1-220,000 gallons near the center of the system and 1-80,000 gallons on Indian Road
Fluoride	Fluoride is added at the pump house as the water is pumped into the system from the Anacortes pipeline. equipment has been removed from the treatment building.

Sample Site Identification

Introduction

There are 18 separate SDWA sampling sites for the Swinomish Utility Authority Water System. The following procedures describes the process and criteria used to select the sample sites. The sampling requirements are for:

- Coliform Bacteria
- Chlorine Residual
- Lead and Copper

The City of Anacortes supplies the additional required data.

The design, operation, and growth of the system all influence the selection of sample sites. The following factors were considered during the development of this sampling plan:

Flow through the system

Anacortes water is introduced to the Swinomish system from a pipeline at the same pump house location as operates the two adjacent wells. Fluoride is added and water flows down Indian Road to the larger reservoir. From the reservoir the water flows to three main areas, splitting near the junction of Snee-Oosh and Indian Road. Most water flows east along Snee-Oosh to the main Community at the junction of Reservation Road. Lines also go west to some connection along Snee-Oosh and Pull & Be Damned Road on the west side of the Reservation.

Piping System

Information about the construction materials, sizes, and locations of the distribution system piping is available on the system prints, and also in the O&M Manual.

Dead-ends

Due to the nature of the Swinomish Utility Authority Water System there are dead ends. Care was taken to select representative areas from different parts of the system as SDWA sampling sites.

Well Fields

The wells (back-up only) for the Swinomish Utility Authority Water System are located on Reservation Road near the junction of Indian Road near the center of the Swinomish Indian Reservation.

Well Control

The operator should refer to the Swinomish Utility Authority Water System O&M Manual for instructions on producing flow from specific wells, or combined well flows.

Sample Sites

The following SDWA sample sites have been established for the Swinomish Utility Authority Water System.

Site #	Site	Why Selected
S-01	Swinomish Housing Authority (SHA) Offices, 17457 1st Street	Accessibility, Provides representation of main Swinomish Housing Community.
S-02	10441 Fern Lane, Tim White Residence	Accessibility, service nearest beginning of distribution system from Main Reservoir.
S-03	17008 Island View Lane, John Petrich residence	Accessibility. Provides good representation of area serviced on the west side, along Snee-Oosh Road
S-04	9812 Sunset Drive Residence	Accessibility. Provides good representation of area on west side, south of Snee-Oosh Rd along Pull & Be Damned Rd.
S-05	11253 A Keeah Street, residence	Accessibility. Provides good representation of high risk housing for lead copper contamination.
S-06	11253 B Keeah Street,	Accessibility. Provides good representation of high risk housing for lead copper contamination.
S-07	17529 1st Street, Elder Housing	Accessibility. Provides good representation of typical construction and at risk occupants.
S-08	17311 Reservation Road, Head Start/Day Care	Accessibility. Provides good representation of typical construction and at risk occupants.
S-09	TBA	
S-10	Pump House sample tap, Reservation Road	Accessibility. Provides representation of back-up well source. Identified as disinfection monitoring point as it is early in the distribution system.
S-11	17587A First Street, Residence	Repeat site for S-01
S-12	17529A First Street, Residence	Repeat site for S-01
S-13	10335 Fern Lane, Residence	Repeat site for S-02
S-14	17502 Indian Road, Residence	Repeat site for S-02
S-15	17022 Island View Road, Residence	Repeat site for S-03
S-16	9639 McGlinn, Residence	Repeat site for S-03
S-17	17356 Goldenview, Residence	Repeat site for S-04
S-18	17404 Maple Lane	Repeat site for S-04

Sample Sites by Constituent

Constituent	SDWA Site #
Chlorine Residual*	S-10 daily for free and total chlorine S-01, S-02, S-03, and S-04 for free chlorine on a rotating schedule.
Fluoride	S-01, S-02, S-03, and S-04 for fluoride on a rotating schedule.
Coliform	S-01, S-02, S-03, and S-04 for monthly sampling
Inorganics	S-10 Unless provided by the City of Anacortes
Nitrate	S-10 Unless provided by the City of Anacortes
Organics (VOC/SOC)	S-10 Unless provided by the City of Anacortes
Lead and Copper	S-01, S-05, S-06, S-07 and S-08 (Use bathroom sink tap)
Radiologicals	S-10 Unless provided by the City of Anacortes
TTHM & HAA5	NA

* Because the Swinomish Utility Authority Water System obtains treated water from the city of Anacortes monitoring chlorine residual is not required. However, daily monitoring as a means of protecting public health is recommended.

Sample Schedule by Constituent

Free Chlorine Residual*

Daily at S-10 and one from S-01 through S-04 as noted below.

Site #	Location	Frequency
S-10	Pump House sample tap, Reservation Road	Daily - free & total
S-01	Swinomish Housing Authority (SHA) Offices, 17457 1st Street	Monday & Friday
S-02	10441 Fern Lane, Tim White Residence	Tuesday
S-03	17008 Island View Lane, John Petrich residence	Wednesday & Saturday
S-04	9812 Sunset Drive Residence	Thursday & Sunday

* Because the Swinomish Utility Authority Water System obtains treated water from the city of Anacortes monitoring chlorine residual is not required. However, daily monitoring as a means of protecting public health is recommended. The table above is provided as a reference should the utility decide to initial standard chlorine residual monitoring. **As a minimum we recommend daily monitoring for total and free at S-10 and free at one other point in the system.**

Coliform

Once each month a Coliform sample is to be collected from the designated sample site(s) for that month and delivered to the lab. This sample collection shall be done following coordination with the laboratory. The operator should make every effort to complete Coliform sampling as early in the month as possible, as well as early in the week. This allows for the possibility of re-sampling, should that be necessary. Voluntary extra Coliform samples should be taken at designated repeat sample sites.

Rotating Sample Sites

The Swinomish Tribal Community system has 4 routine Coliform sample sites: S-01, S-02, S-3, and S-04. Samples are to be collected from these sites as follows:

Site	Sampling Month
S-01	January
S-02	February
S-03	March
S-04	April
S-01	May
S-02	June
S-03	July
S-04	August
S-01	September
S-02	October
S-03	November
S-04	December

Repeat Sample sites		The following homes have been chosen for repeat Coliform sampling sites in the event of a positive sample:	
	S-01:	Upstream:	S-11
		Downstream:	S-12
	S-02:	Upstream:	S-13
		Downstream:	S-14
	S-03:	Upstream:	S-15
		Downstream:	S-16
	S-04:	Upstream:	S-17
		Downstream:	S-18
Inorganics		Every 3 years at S-10 Unless provided by the City of Anacortes	
Lead and Copper		Every 3 years, one sample from each of the following:	
		S-04, 05, 06, 07, 08 (use bathroom tap). *In addition, one set of samples must be collected during the first six months of operation of the corrosion control equipment and a second complete set of samples collected during the second six months of operation of the corrosion control equipment.*	
Nitrate		Annually, S-10 Unless provided by the City of Anacortes	
Organics (VOCs/SOCs)		Every 3 years at S-10 Unless provided by the City of Anacortes	
Radiologicals		Every 3 years at S-10 Unless provided by the City of Anacortes	
Disinfection By-Products		NA	

Summary Sampling Plan: Swinomish Utility Authority Water System

Constituent	Site #	Sample Type	Frequency	Next Sample
Chlorine – Total & Free **	S-10	O & M	Daily	
Chlorine – Free **	S-01 through S-04 (see schedule)	O & M	Daily	
Coliform	S-01 through S-04 (see schedule)	SDWA	Monthly	1st week
IOCs	S-10*	SDWA	3 years	NA
Lead & Copper	S-01, 05,0 6, 07, 08 (use bathroom sink tap)	SDWA	3 years	6/2008
Radiologicals	S-10*	SDWA	3 years	NA
Nitrate	S-10*	SDWA	Annual	NA
VOCs/SOCs	S-10*	SDWA	3 years	NA
TTHM & HAA5	NA	SDWA	Annual	NA

*Unless provided by the City of Anacortes

** Because the Swinomish Utility Authority Water System obtains treated water from the city of Anacortes monitoring chlorine residual is not required. However, daily monitoring as a means of protecting public health is recommended.

USGS **1 km N of Shelter Bay, Washington, United States** 16 Jul 1998

200,000 gal Tank

Indian Road

Snee-Oosh Road

Snee-Oosh Road

S-14

S-02

S-13

Fern Lane

0 100M

0 100yd

Coliform and Chlorine Sites

Repeat sample sites

N
W E
S

Image courtesy of the U.S. Geological Survey

Swinomish Tribe
Swinomish Utility Authority Water System
Sample Sites - 12/15/05 – Map #2

USGS **1 km NE of Shelter Bay, Washington, United States** 16 Jul 1998

0 100M 0 100yd

Coliform and Chlorine Sites

Repeat sample sites

N W E S

Image courtesy of the U.S. Geological Survey

Swinomish Tribe
Swinomish Utility Authority Water System
Sample Sites - 12/15/05 – Map #1

Image courtesy of the U.S. Geological Survey

Swinomish Tribe
Swinomish Utility Authority Water System
Sample Sites - 12/15/05 – Map #4

Coliform and Chlorine Sites

Repeat sample sites

N W E S

IDSE Submission

Confirmation Page

Your Plan / Report was submitted successfully! Please print this page for your reference.

Confirmation #	41656
Date Submitted:	05/14/2009

If you have selected sending by hardcopy in the Attachments section or wish to submit a hard copy version of your plan, report, or attachments in addition to electronically submitted files please mail or e-mail the files to one of the following addresses:

Mailing Address:

US EPA-IPMC
PO Box 98
Dayton, OH 45401-0098

E-mail Address:

stage2mdbp@epa.gov

Home

IDSE Report for Standard Monitoring

I. IDSE General Information

PWS ID	105300032
*PWS Name	Swinomish - CWS
*PWS Address	P.O. Box 340
*City	LaConner
*State	WA
*Zip	98257
*Population Served	1575
*System Type	CWS
*Source Water Type	SWP
*Buying / Selling Relationships	Consecutive System

C. PWS Operations

Residual Disinfectant Type	☑ Chlorine	☐ Chloramines	☐ Other		
Number of Disinfected Sources	Surface		GWUDI		
	Ground		Purchased	1	

D. Contact Person

*Contact Name	John Petrich	
Title	Manager	
Phone Number	3604667223	ext.
Fax	(360) 466-7219	
E-mail Address	jpetrich@swinomish.nsn.us	

IDSE Report for Standard Monitoring

II. Stage 2 DBPR Requirements*

A. Number of required Stage 2 DBPR Sites:

Total 2

Highest TTHM 1

Stage 1 0
DBPR

Highest HAA5 1

B. IDSE Schedule

Schedule 2

C. Required Stage 2 DBPR Monitoring Frequency

○

During peak historical month (1 monitoring period)

◉

Every 90 days (4 monitoring periods)

DSE Report for Standard Monitoring

III. Monitoring Results

A. Did you deviate in any way from your approved standard monitoring plan?

◉ ○

Yes No

If YES, explain:

Missed the first round of saamples in May 08, subsituted sampling May 09. May 09 sample was taken in the first week not second due to schedule conflicts and allow for lab results.

B. Where were your TTHM and HAA5 samples analyzed?

In-House ○ Is your in-house laboratory certified? ○ ○ Yes No

Certified Laboratory ◉ Name of certified laboratory: Edge Analytical

C. What method(s) was used to analyze your TTHM and HAA5 samples?

TTHM		HAA5	
☐	EPA 502.2	☐	EPA 552.1
☑	EPA 524.2	☑	EPA 552.2
☐	EPA 551.1	☐	EPA 552.3
		☐	SM 6251 B

IDSE Report for Standard Monitoring

D. IDSE Standard Monitoring Results - TTHM

	Site ID [1]	Data Type	TTHM (mg/L)				LRAA
1	SM1	Sample Date	08/11/2008	11/12/2008	02/11/2009	05/04/2009	0.016
		Sample Result	0.014	0.019	0.010	0.021	
2	SM2	Sample Date	08/11/2008	11/12/2008	02/11/2009	05/04/2009	0.029
		Sample Result	0.029	0.031	0.025	0.031	

IDSE Report for Standard Monitoring

E. IDSE Standard Monitoring Results - HAA5

	Site ID [1]	Data Type	HAA5 (mg/L)				LRAA
1	SM1	Sample Date	08/11/2008	11/12/2008	02/11/2009	05/04/2009	0.038
		Sample Result	0.018	0.019	0.09	0.026	
2	SM2	Sample Date	08/11/2008	11/12/2008	02/11/2009	05/04/2009	0.022
		Sample Result	0.020	0.015	0.018	0.035	

IDSE Report for Standard Monitoring

F. Stage 1 DBPR Compliance Monitoring Results - TTHM

Site ID [1]	Data Type	TTHM (mg/L)				LRAA
1	Sample Date					
	Sample Result					
2	Sample Date					
	Sample Result					
3	Sample Date					
	Sample Result					
4	Sample Date					
	Sample Result					
5	Sample Date					
	Sample Result					
6	Sample Date					
	Sample Result					
7	Sample Date					
	Sample Result					
8	Sample Date					
	Sample Result					

IDSE Report for Standard Monitoring

G. Stage 1 DBPR Compliance Monitoring Results - HAA5

Site ID [1]	Data Type	HAA5 (mg/L)				LRAA
1	Sample Date					
	Sample Result					
2	Sample Date					
	Sample Result					
3	Sample Date					
	Sample Result					
4	Sample Date					
	Sample Result					
5	Sample Date					
	Sample Result					
6	Sample Date					
	Sample Result					
7	Sample Date					
	Sample Result					
8	Sample Date					
	Sample Result					

IDSE Report for Standard Monitoring

IV. Justification of Stage2 DBPR Compliance Monitoring Sites*

#	Stage 2 Compliance Monitoring Site ID	Site Type	Justification
1 .	SM#2	Highest TTHM	Highest TTHM and deadend line.
2 .	SM#2	Highest HAA5	Highest HAA5 and deadend line.

IDSE Report for Standard Monitoring

V. Peak Historical Month

A. *Peak Historical Month: August

B. Is Your Peak Historical Month the Same as in Your IDSE Standard Monitoring Plan?

◉ Yes

○ No

If no, explain how you selected your new peak historical month.

VI. Proposed Stage2 DBPR Compliance Monitoring Schedule*

	Stage 2 Compliance Monitoring Site ID[1]	Projected Sampling Date (date or week) [1] Period 1	Period 2	Period 3	Period 4
1	SM#2	8/7/12	11/6/13	2/5/13	6/7/13
2	SM#2	8/7/12	11/6/13	2/5/13	6/7/13

[1] *period = monitoring period. Complete for the number of periods from Section II.C*

IDSE Report for an Existing Monitoring Results SSS

VII & VIII & Schematic Attachments

The following is a list of attachments that have already been submitted.

File Name	Date Uploaded
None submitted.	

If you prefer to send attachments via mail or e-mail, please check the box for "Sending attachments by mail". You may mail your attachments to one of the following addresses:

Mailing Address:
US EPA-IPMC
PO Box 98
Dayton, OH 45401-0098

E-mail Address:

stage2mdbp@epa.gov

☑

Sending Attachments by Mail

Enter a description of the items that will be mailed.

report and test results

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
WATER AND WATERSHEDS

August 11, 2009

John Petrich
Swinomish Utility Authority
PO Box 340
La Conner, Washington 98257

RE: Swinomish (PWSID 105300032) Stage 2 Disinfection Byproducts IDSE Report

Dear Mr. Petrich:

The Initial Distribution System Evaluation (IDSE) report submitted to EPA on May 15, 2009 has been approved but **the proposed monitoring schedule requires corrections**. I have enclosed the 2 pages that need corrections. I have already corrected the sample site. Please complete page 2 section c and return the form to me (keep a copy for your records).

The site with the highest HAA5 needed to be based on the locational running annual average from the IDSE results instead of the highest individual sample. Since SM#1 had the highest average for HAA5 and SM#2 had the highest average for TTHM, each site must be sampled. I corrected the sites in the attached monitoring plan.

The peak historical month identified in your report was based on the IDSE plan, the peak month should be based on the sampling results. You must sample during the peak historical month. Since the IDSE sample results indicated that the month with the highest concentrations occurred in May, your future sampling must happen in May. I entered the months when sampling must occur in page 2 section C but left a blank for you to fill in the week of the month that you would like to sample (ie *week 2 of November*). You should sample during the same week each time.

Starting in November of 2012 you will be required to sample quarterly at site SM#1 for HAA5 and at site SM#2 for TTHM. The samples must be collected in the time period that you will specify in page 2, section c of the attached monitoring schedule. Please contact me at (206) 553-6235 or becker.dale@epa.gov if you have any questions.

Sincerely,

Dale Becker
Environmental Scientist

Enclosure

Stage 2 DBP Monitoring Plan

JUSTIFICATION OF STAGE 2 DBPR COMPLIANCE MONITORING SITES*

Stage 2 Compliance Monitoring Site ID	Site Type	Justification
SM #2	X Highest TTHM	highest locational running annual average from IDSE monitoring
SM #1	X Highest HAA5	highest locational running annual average from IDSE monitroing

Attach additional copies of this sheet if you need more room.

Stage 2 DBP Monitoring Plan

PEAK HISTORICAL MONTH AND STAGE 2 DBPR COMPLIANCE MONITORING SCHEDULE

A. Peak Historical Month* May

B. Is Your Peak Historical Month the Same as in Your IDSE Standard Monitoring Plan?

____ Yes __X__ No

If no, explain how you selected your new peak historical month (attach additional sheets if needed)

IDSE Monitoring Results - TTHM and HAA5 were highest in May

C. Proposed Stage 2 DBPR Compliance Monitoring Schedule*

Stage 2 Compliance Monitoring Site ID	Projected Sampling Date (date or week) [1]			
	period 1	period 2	period 3	period 4
SM #2 - TTHM	Week 2 of Nov	Week 2 of Feb	Week 2 of May	Week 2 of Aug
SM #1 - HAA5	Week 2 of Nov	Week 2 of Feb	Week 2 of May	Week 2 of Aug

[1] *period = monitoring period. Complete for the number of monitoring periods from Section II.C.*

Attach additional copies of this sheet if you need more room.

Stage 2 DBP Monitoring Plan

JUSTIFICATION OF STAGE 2 DBPR COMPLIANCE MONITORING SITES*

Stage 2 Compliance Monitoring Site ID	Site Type	Justification
SM #2	X Highest TTHM	highest locational running annual average from IDSE monitoring
SM #1	X Highest HAA5	highest locational running annual average from IDSE monitroing

Attach additional copies of this sheet if you need more room.

Stage 2 DBP Monitoring Plan

PEAK HISTORICAL MONTH AND STAGE 2 DBPR COMPLIANCE MONITORING SCHEDULE

A. **Peak Historical Month*** May

B. **Is Your Peak Historical Month the Same as in Your IDSE Standard Monitoring Plan?**

_____ Yes __X__ No

If no, explain how you selected your new peak historical month (attach additional sheets if needed)

IDSE Monitoring Results - TTHM and HAA5 were highest in May

C. **Proposed Stage 2 DBPR Compliance Monitoring Schedule***

Stage 2 Compliance Monitoring Site ID	Projected Sampling Date (date or week) [1]			
	period 1	period 2	period 3	period 4
SM #2 - TTHM	Week 1 of Nov	Week 1 of Feb	Week 2 of May	Week 2 of Aug
SM #1 - HAA5	Week 2 of Nov	Week 1 of Feb	Week 2 of May	Week 2 of Aug

[1] *period = monitoring period. Complete for the number of monitoring periods from Section II.C.*

Attach additional copies of this sheet if you need more room.

WELLHEAD PROTECTION PLAN
SWINOMISH INDIAN RESERVATION
SKAGIT COUNTY, WASHINGTON

HWA Project No. 2001 073

August 28, 2001

Prepared for:

Swinomish Indian Tribal Community

Swinomish Office of Planning
and Community Development
Swinomish Utility Authority
Swinomish Health Department

HWA GEOSCIENCES INC.

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WELLHEAD PROTECTION PLAN
SWINOMISH INDIAN RESERVATION
SKAGIT COUNTY, WASHINGTON

1.0 INTRODUCTION

This section provides the background, objective and scope for the Swinomish Indian Reservation's Wellhead Protection Plan (WHPP). It also includes discussion of the regulatory framework requiring development of a Wellhead Protection Program.

Many types of activities and land uses can contaminate ground water. When contaminants enter the ground water system, they can readily move with the normal flow of ground water to reach an individual or public water supply well. A contaminated well often indicates contamination of a large part of an aquifer. Clean up of contaminated ground water, if possible, is a costly and time consuming process that can take many years.

Loss of a public water system due to ground water contamination leads to many direct costs. Alternative drinking water supplies must be secured to replace the once-dependable supply. Residents are often forced to buy and transport bottled water to their homes for daily water needs. Indirect costs include health impacts and loss of property value.

Restoring a contaminated ground water resource would place a significant financial burden on the Tribe. Implementing a Wellhead Protection Program would minimize the potential for loss of the resource. Wellhead Protection Programs provide a tool for community leaders and members to appreciate and protect their ground water resource.

1.1 BACKGROUND

Nearly 70 percent of the Reservation's 4,700 residents depend wholly or in part on ground water for their daily needs. In 1999, residents on the Reservation used approximately 280,000 gallons of water per day (gpd). Of this amount, ground water sources supplied approximately 106,000 gpd, or 38 percent of the total use (Didricksen, 2001). The Tribe has three wells in its wellfield (Figure 1). The Tribe does not use the wells for daily drinking water supply, but has identified Wells #2 and #3 (and the aquifer into which the wells withdraw ground water) as the Tribe's primary emergency or backup water supply. Well #1 is not used. In 1999, during periodic well testing, only 736 gpd of ground water was withdrawn from Wells #2 and #3 and placed in the public water supply. Other public water systems obtained approximately 18,000 gpd of ground water from ten other wells on the Reservation. Private wells supplied approximately 87,500 gpd to residents. Most of the pumped ground water was withdrawn by single wells for individual use. The exact number of private wells is unknown but approximately 250 wells exist on Tribal lands (Didricksen, 2001).

Nine ??? public water systems that **partially or completely rely on ground water ???** exist on the Reservation. A tenth system (Shelter Bay) relies completely on surface water from the City of La Conner. Public water systems include those systems having two or more service connections and/or serving a variable population. On behalf of the Tribe, the Swinomish Utility Authority (SUA) provides and manages the Tribal water supply, which includes the three ground water wells. Other small public water systems may exist that serve just a few connections.

The majority of domestic ground water supply wells were completed in the uppermost shallow, unconfined aquifer beneath the Reservation. This aquifer is the ground water system most sensitive to pollution from development activities and to loss of critical recharge areas due to development. The SUA wells were completed in a deeper aquifer.

1.2 Objective and Scope

This WHPP fulfills the requirement for the federal mandate and state obligation (see following section) to establish a comprehensive Wellhead Protection Program for the Tribe. The WHPP also fulfills specific goals identified in the draft Swinomish Comprehensive Plan (Swinomish Land Use Advisory Board, 1990). These goals include long-term maintenance of ground water supplies, and the identification and protection of ground water recharge areas and water supply aquifers on the Reservation. This WHPP provides a working tool to help the Tribe and its members to protect its valuable ground water resources. This plan includes the following objectives:

- Identify the area of concern, or the wellhead protection area (WHPA), around the Tribe's wellfield.
- Identify and reduce the potential for contaminant sources to pollute the Tribe's ground water resource
- Identify specific management policies to provide long-term protection of ground water quality in the WHPA
- Outline a spill response plan that will reduce the risk of contamination of the Tribe's wellfield
- Identify contingencies for the emergency drinking water supply in the event contamination of the Tribe's wellfield occurs
- Outline an approach for public education and participation in protecting the ground water supply

1.3 Regulatory Authority for Wellhead Protection

1.3.1 Federal Wellhead Protection Program Requirements

The federal *Safe Drinking Water Act* (SDWA) was initially adopted in 1974. Its primary purpose was to reduce any adverse health effects to the public from potentially contaminated drinking water supplies. The SDWA required that the Environmental Protection Agency (EPA) set standards for maximum contaminant levels in public water supplies delivered to any use. By 1986, EPA had developed standards for 34 contaminants. Increased public concern about other potential contaminants in drinking water supplies led to amendments to the SDWA in 1986. The amendments required EPA to set maximum contaminant levels for 83 compounds and an additional 25 compounds every 3 years thereafter.

Subsection 1428 of the SDWA Amendments of 1986 also required development of wellhead protection programs to "protect wellhead areas [WHPAs] within their jurisdiction from contaminants which may have any adverse effect on the health of persons." WHPAs are defined in Section 1428 as the "surface and subsurface area surrounding a water well or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield."

The SDWA specified that State Wellhead Protection Programs be submitted to EPA for approval. Section 1428 specified that each program shall, at a minimum:

- Specify the duties of agencies, local governmental entities, and public water supply systems with respect to the development and implementation of programs required by this section;
- For each wellhead, determine the WHPAs based on all reasonable hydrogeologic information on ground water flow, recharge and discharge and other information deemed necessary to adequately determine the wellhead protection area;
- Identify within each WHPA, all existing and potential anthropogenic (man-made) sources of contaminants which may have any adverse affect on the health of persons;
- Describe a program that contains, as appropriate, technical assistance, financial assistance, implementation of control measures, education, training, and demonstration projects to protect the water supply within protection areas from such contaminants;
- Include contingency plans for the location and provision of alternate drinking water supplies for each public water system in the event of well or wellfield contamination by such contaminants;

- Include a requirement that consideration be given to all potential sources of such contaminants within the expected wellhead area of a new water well which serves a public water supply system;

- Encourage public participation to the maximum extent possible, including but not limited to the establishment of technical and citizen's advisory committees, and including notice and opportunity for public hearing on the program before it is submitted to the Administrator.

One of the primary incentives for gaining EPA approval of a wellhead protection program is the potential future availability of funds through the SDWA for wellhead protection. Only those approved programs will likely be eligible for any funding that may become available because of reauthorization of the SDWA. The overall structure of the wellhead protection program can be tailored to specific implementation issues.

1.3.2 Washington State Wellhead Protection Requirements

In implementing the SDWA, EPA has encouraged states to develop mandatory wellhead protection programs that would require protection of public water supplies in each state. Under Washington Administrative Code (WAC) 246-290, Washington State Department of Health (DOH) is developing a voluntary, rather than mandatory, wellhead protection program due to fiscal, political, administrative, or other reasons. EPA has specified several additional components that should be included in voluntary programs to compensate for potential lack of implementation since participation is not mandatory. In addition to the elements listed above, EPA expects the following also be included in each voluntary program:

- An active and ongoing program to promote local wellhead protection planning, including a strong public education and outreach strategy,

- Specific incentives to serve as inducements for local participation,

- A plan for offering technical assistance and program guidance to local entities, and

- A description of how local wellhead protection efforts and wellhead protection areas will be officially recognized by state programs and agencies with ground water protection responsibilities.

Administration of the Swinomish Reservation is complex, due to the trust relationship between the Tribe and the federal government, Tribal sovereignty and self-government, and cooperative agreements between the Tribe and Washington State and Skagit County. The SUA provides and manages water supplies, tests water quality, and reports directly

to the EPA. Because the wells are reserved for emergency use, the EPA requires no water quality testing of ground water from the SUA wells.

The DOH regulates non-Tribal public water systems. DOH classifies public water systems as either "Group A" or "Group B." Group A systems are the largest, and are subject to federal SDWA requirements. Group B systems are smaller and are subject to state and local requirements. Group A public water systems serve 15 or more connections, or 25 or more people. Group A systems may either serve residents in "Community" systems, or non-residents in "Non-Community" systems. Group B public water systems serve 2 to 14 connections and fewer than 25 people. Individual wells are not regulated by DOH.

1.4 PLAN OVERVIEW

This WHPP contains the following elements:

- A description of Tribal lands and resident uses of ground water (Section 2)
- The hydrogeology and ground water resources of the Reservation (Section 3)
- Identification of the wellhead protection area (WHPA) around the wellfield (Section 4)
- Inventory of the actual and potential contaminants in the WHPA (Section 5)
- An evaluation of the aquifer susceptibility in the WHPA (Section 6)
- AWHPA management strategy (Section 7)
- Contingencies for contamination of the ground water resource in the WHPA (Section 8)
- References (Section 9)
- A glossary of terms (Section 10)

2.0 GEOGRAPHIC SETTING AND SYSTEM INFORMATION

2.1 SWINOMISH INDIAN RESERVATION

The Swinomish Indian Tribe, which is governed by the Swinomish Indian Tribal Community (SITC), is a signatory to the Treaty of Point Elliott of January 22, 1855 ratified by Congress on March 8, 1859. The Tribe consists largely of people who are descendants of one or more of the groups known in 1855 to the treaty commission as Skagit, Kikiallus, Swinamish, and Samish. The Tribe's land base is the Swinomish Indian Reservation located west of the Swinomish Channel, approximately 70 miles north of Seattle. The Treaty of 1855 set aside the peninsula at the southeastern end of Fidalgo Island, formerly called Perry's Island or referred to as Shais-quihl, as the reservation for the peoples of the Skagit. The Executive Order of 1873 limited the northwest boundary to the section lines of Sections 2 and 10, extending north to extreme low water in Padilla Bay. The Reservation, as set aside by Executive Order in 1873, occupies the southeast portion of Fidalgo Island (Figure 1). It encompasses approximately 7,344 acres of land area and 2,747 acres of Tribal tidelands (Figure 2).

The Reservation, which encompasses the southeast portion of Fidalgo Island (Figure 1), is a topographic highland or plateau surrounded by estuarine tideflats and shoreline (Figure 2). Of the approximately 25 inches of rain falling upon the Reservation, less than 9 to 12 inches infiltrates into the surface (Didricksen, 2001). The remainder is returned through evapotranspiration from the surface or runs off in streams that generally flow radially from the center of the Reservation. Minor perennial streams on the Reservation do not contain sufficient flow to provide a reliable water supply. The majority (62 percent) of the public water supply derives from imported surface water. A minor portion of public and private water supply is derived from ground water wells installed on the Reservation.

2.2 SWINOMISH INDIAN TRIBAL COMMUNITY (SITC)

The SITC is federally recognized and operates under Constitution and Bylaws adopted in 1936 following the Indian Reorganization Act of 1934. The Tribal governing body is an eleven-member Swinomish Indian Senate operating under the leadership of the Tribal Chairman. Twenty committees and commissions in the Senate facilitate participation in government decision-making. The Tribe's administrative structure includes the Senate, a Planning and Community Development Department, Social Services Department, Utility Authority, Housing Authority, Police Department, Tribal Court, and Fisheries Office.

Of the 4,700 Reservation residents, approximately 1,000 are Indian and approximately 700, or 15 percent of the total population are enrolled Swinomish. Approximately 480

Tribal members live in the Swinomish Village housing complex and the remaining Tribal members live near the Swinomish Village and scattered throughout the Reservation. The non-Indian residents occupy both fee (long-term lease) and trust (Tribe) lands. Residential areas are primarily clustered along the shoreline zone, with some low-density development in the upland zone.

2.3 PUBLIC WATER SUPPLY SYSTEMS WITHIN THE SWINOMISH INDIAN RESERVATION

Swinomish Utility Authority (SUA). The Swinomish Utility Authority (SUA) (Washington ID No. **???**) is a Group A system that supports up to **???** potential connections with surface water from the City of Anacortes. The SUA is the designated water service purveyor for approximately 1,050 residents on the Reservation (Didricksen, 2001). This designation is recognized formally in the *Skagit County Coordinated Water Supply Plan* [CWSP], dated July 1993. All existing community water systems located within the Swinomish Indian Reservation at the time of the CWSP are non-expanding systems under this arrangement. New connections within the service area of most community water systems are allowed, while service area boundary expansions are not allowed.

Two of the SUA wells, #2 and #3, are identified as the SUA emergency backup supply, with the ability to supply approximately 200 gpm or 288,000 gpd. The SUA maintains a chlorination treatment system and an intertie to the main water supply line at the wellhead. Well #1 is inactive, but potentially could also contribute emergency ground water supplies if the well was rehabilitated to remove iron bacteria encrustation.

Shelter Bay. The Shelter Bay system (Washington ID No. 78155Q) is a Group A system that supports up to 935 potential connections with surface water. Shelter Bay purchases water from the Town of La Conner, who in turn purchases water from the City of Anacortes, which derives its water from the Skagit River. The water pipeline from La Conner passes under the Swinomish Channel.

Snee-Oosh Land Company. The Snee-Oosh Land Company (Washington ID No. 808009) is a Group A system that supports up to 65 potential connections with ground water from five wells.

Goldenview. The Goldenview (Washington ID No. **???**) is a Group B system that supports up to **???** potential connections with **ground water** from **???** wells.

Hope Island. The Hope Island system (Washington ID No. 34215E) is a Group B system that supports seven connections with ground water from one well.

Reef Point. The Reef Point system (Washington ID No. 71694E) is a Group B system that supports six connections with ground water from one well.

Thousand Trails – La Conner Preserve. The Thousand Trails system (Washington ID No. 00439X) is a Group A system that supports up to 334 potential connections with ground water from two wells.

Skelton. The Skelton (Washington ID No. **???**) is a Group B system that supports up to **???** potential connections with **ground water** from **???** wells. This service likely will be transferred to the Swinomish Utility Authority.

Kwonesum. The Kwonesum system (Washington ID No. 61426C) is a Group B system that supports up to 24 potential connections with ground water from one well. The Kwonesum system is scheduled for transfer to the SUA.

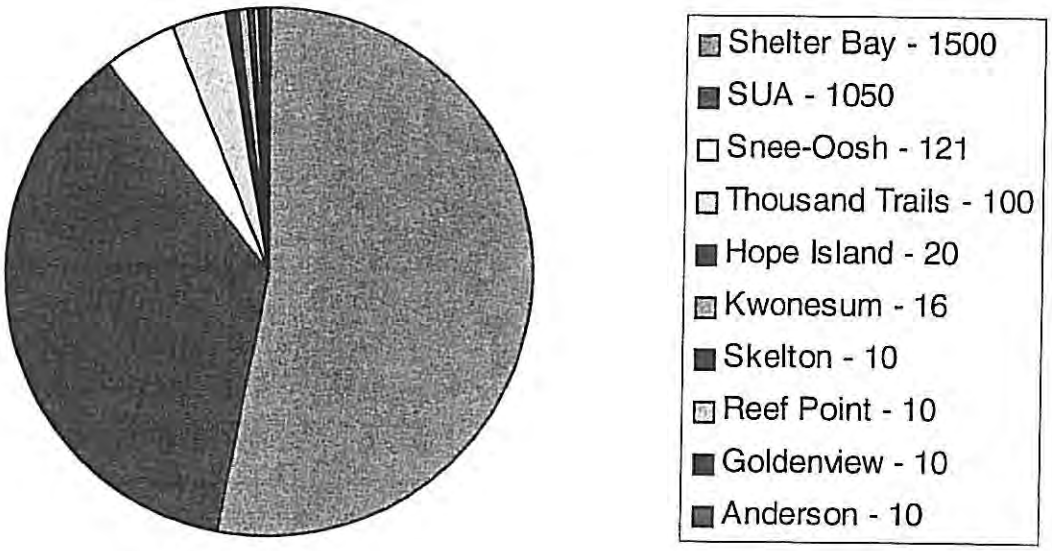
Anderson. The Anderson system (Washington ID No. 023538) is a Group B system that supports two connections with **ground water???** from **???** well.

Sunnyslope Water System Service Area. The Sunnyslope Water System Service Area (Washington ID No. 853400) was transferred to and is now served by the SUA. Sunnyslope was a Group B system that supported nine connections with **ground water???** from **???** wells.

Other multiple-connection (Class B-type) systems may exist on the Swinomish Indian Reservation, but have not been identified or included into the SITC system inventory.

The following diagram shows a pie diagram of water systems by population served.

Population Served by Public Water Systems
Swinomish Indian Reservation



2.4 SUA System Information

The SUA system consists of a surface water source (Skagit River) supplied by a pipeline from the City of Anacortes water supply. The SUA system distributes drinking water to most of the tribal lands via a pipeline network. The SUA ground water supply wells are connected to the SUA water supply system to provide emergency supply in case of disrupted Anacortes water supply. Ground water withdrawn from the wells would be treated at the wellhead and pumped into **???** reservoirs capable of storing up to **???** gallons, or **???** days of emergency use.

2.4.1 SUA Production Wells

The SUA operates and owns three ground water wells which are located in the north central portion of the Reservation next to Reservation Road near the southeast corner of Section 15, Township 34 N, Range 2E (Figure 2). Wells #2 and #3 are completed in the

sea level aquifer (see following section) located near the topographic and hydrologic high point of the Reservation. Appendix 2 contains copies of boring and completion logs for the three SUA wells. The following table summarizes completion details for the wells.

SUA Well Completion Details
Swinomish Indian Reservation

Well	Aquifer	Well Diameter (inch)	Well Depth (feet)	Depth to Ground Water(feet)	Tested Pumping Rate (feet)	Drawdown at Pumping Rate (feet)
#1 (inactive)	Vashon Outwash	6	143	113	52	5.2
#2	Sea-Level	8	273	177	125	5.5
#3	Sea-Level	8	~~258~~ 240	180	151	51

3.0 HYDROGEOLOGIC SETTING

3.1 HYDROSTRATIGRAPHY OF THE SWINOMISH INDIAN RESERVATION

The geologic units underlying the Swinomish Indian Reservation consist of Pleistocene to Recent unconsolidated clay, silt, sand and gravel, and Tertiary metamorphosed sedimentary and volcanic bedrock. The unconsolidated units are grouped into hydrostratigraphic units (geologic units with distinct hydraulic properties) including two productive water-bearing zones, or aquifers, and several laterally discontinuous and uncharacterized aquifers. Generalized geologic maps (Dragovich, 2000) and cross-sections (Didricksen, 2001) of the Reservation are included in Appendix 1.

The Reservation lies in the Puget Sound Lowland physiographic province of Western Washington. The Puget Sound Lowland describes an elongate north-south structural depression bounded on the east by the Cascade Mountains and on the west by the Olympic Mountains. Multiple episodes of glaciation have filled the basin with glacially deposited and reworked sediments.

The existing topography, surficial geology, and hydrogeology in the project area are heavily influenced by past glacial activity. The regional topography is dominated by a series of north-south trending elongate ridges and drift uplands, typified by the southern portion of Fidlago Island (the Reservation). The uplands are separated by large Pleistocene glacial troughs, of which many are now occupied by bodies of water.

Regionally, Tertiary aged bedrock is overlain by glacial and interglacial deposits. Bedrock units are exposed along the southern tip of the Reservation.

The following table summarizes the types and relationships of the primary hydrostratigraphic units at the Reservation. The units are listed from shallow to deep.

Hydrostratigraphic Unit	Composition	Water-Bearing Characteristics
Everson Glaciomarine Drift	Sand, gravel, silt	Discontinuous layers Limited domestic use
Vashon Till	Silt, sand, gravel	Generally impermeable Little or no domestic use
Vashon Advance Aquifer	Sand, gravel, silt	Extensive and permeable, unconfined Domestic use
Olympia Confining Bed	Silt, clay, sand, gravel	Extensive, low permeability Limited domestic use
Sea-Level Aquifer	Sand, gravel	Limited extent, permeable, confined Domestic use
Undifferentiated Aquifer	Sand, gravel, silt, clay	Unknown extent, permeable, confined Domestic use

3.1.1 Undifferentiated Aquifers (Ua)

The oldest hydrostratigraphic unit contains undifferentiated aquifers (Ua) and confining beds comprised of dense clay, silt, sand and gravel. These beds originated from glacial till and glacial outwash gravel deposited during at least two periods of glaciation. A layer of laminated clay, silt, sand and gravel from the Whidbey Interglacial episode divides the glacial deposits. Very few wells penetrate to the depth of the unit or to Tertiary bedrock and little is known about the thickness and extent of the Ua. Thickness estimates of the Ua range up to several hundred feet. Depth to ground water in the Ua typically exceeds 300 feet. The Ua supplies a portion of the Reservation domestic water needs. Approximately 29 percent of the wells on the Reservation are completed in the Ua.

3.1.2 Sea-Level Aquifer (SLa)

The Sea-Level Aquifer (SLa), "a productive, confined aquifer of limited areal extent" (Didricksen, 2001). The SLa consists primarily of clean sand and gravel originating from glacial outwash and/or alluvium deposited during the Olympia Interglacial period, which

preceded the most recent (Vashon) glacial episode. Fine-grained deposits from the Olympia Interglacial confine the aquifer from above, and the Ua underlies the aquifer. The SLa thickness ranges from zero to forty feet, and averages fourteen feet (Didricksen, 2001). The SLa occurs primarily beneath the northern part of the reservation, although a localized aquifer positioned in the southwestern part of the reservation may also be part of the SLa (Appendix 1). Depth to ground water in the SLa ranges from 100 to 300 feet, or an average of 200 feet (Didricksen, 2001). The deepest ground water in the SLa occurs at the center of the Reservation. The aquifer is confined, which indicates that water levels in wells completed in the SLa rise above the top of the hydrostratigraphic unit.

Estimates of hydraulic conductivity (a measurement of a geologic unit's capacity to transmit water) for the SLa range from approximately 10 to 134 feet per day, with a median value of 25 feet per day (Didricksen, 2001). Woodward et al (1995) estimated a storage coefficient (storativity) value of 0.0015. Approximately 25 percent of the wells on the Reservation are completed in the SLa at an elevation close to mean sea level. Several wells, including two of the SUA water supply wells, were completed in the SLa, which provides a sustainable domestic ground water supply.

3.1.3 Olympia Confining Bed (Oc)

Low permeability river and lake deposits of the Olympia Interglacial period confine the underlying SLa. The Olympia Confining Bed (Oc) consists of dense clay, clayey silt, silty sand, sand, and peat, with minor gravel and cobbles (Didricksen, 2001). Approximately 9 percent of the wells on the Reservation are completed in thin lenses of sand in the Oc. The Olympia Interglacial deposits act as a lower confining layer beneath the Vashon Advance Outwash Aquifer (Va).

3.1.4 Vashon Advance Outwash Aquifer (Va)

As the Vashon Glacier advanced southward in Skagit County, large quantities of stratified sand and gravel were deposited by melt waters emanating from the front and sides of the glacier. The Va consists of an upper gravelly unit underlain by a fine to medium grained very dense, silty fine sand to sandy gravel with discontinuous layers of silt and clay. The Va is unconfined. Ground water in wells completed in Va coincides with the level of the water table. The Va thickness ranges from a few feet to 110 feet, with an average thickness of about 25 feet. Depth to ground water in the Va ranges from 50 to 200 feet, or an average of 125 feet (Didricksen, 2001).

Hydraulic conductivity estimates range from 5.9 to 66.4 feet per day, with a median value of 18.4 feet per day, and specific yield (a measurement of a geologic unit's capacity to store water) is estimated at 0.12 (Didricksen, 2001). Approximately 30 percent of the

wells on the Reservation are completed in the Va at an elevation of 100 feet or more above mean sea level.

3.1.5 Vashon Till

Vashon Till, commonly referred to as "hardpan" or "boulder clay", consists of an unsorted mixture of sand, gravel, and boulders firmly embedded in a compact matrix of silt and clay. Glacial till owes its compact nature to the fact that it was laid down beneath the heavy mass of glacial ice. Vashon Till consists of clayey or silty gravel, sandy clay, and clay with sand and gravel with a total thickness ranging from 20 feet to 100 feet. The till is generally unsaturated, but may contain isolated and variably sized perched lenses of ground water where the deposits are thickest at the topographic high in the central part of the reservation. Only 3 percent of the wells on the Reservation are completed in the Vashon Till and associated Everson glaciomarine drift.

3.1.6 Everson Glaciomarine Drift

When the most recent Vashon-age glacier began to recede as the climate warmed, the ice lobes retreated northward through Puget Sound and the Strait of Juan de Fuca. The retreat of ice within the strait allowed marine waters to flow into the Puget Lowland. The marine water dislodged, melted, and floated much of the remaining ice (Didricksen, 2001). This geologic event has been designated as the Everson Interstade (Dragovich, et al, 2000). The youngest glacial deposit in the study area, Everson glaciomarine drift, was deposited in an environment that was changing from glacial to marine. This unit has been subdivided into several sub-units ranging from glaciolacustrine (glacier lake) silts and clays, to till, to various types of terrestrial, glacial, and marine sediments, and beach deposits (Dragovich, et al, 2000). This unit consists of sand, sandy gravel, and gravel with interlayered silt and silty sand. The unit thickness ranges from 50 feet to 100 feet. Glaciomarine outwash was not over-ridden and compressed by continental ice sheets. Consequently, the glaciomarine outwash is loose to medium dense.

3.2 Hydrogeologic Conceptual Model of Ground Water Flow

Of the 32 inches of precipitation that falls on the Reservation, less than 9 to approximately 12 inches of water infiltrates the surface (Didricksen, 2001). The water permeates downward through the unsaturated Vashon Till and glaciomarine deposits into the Va. Subsequently, ground water in the Va percolates into the fine-grained Oc and the coarser-grained SLa, eventually saturating the rest of the underlying stratigraphy and bedrock. The bedrock underlying the deepest glacial/sedimentary aquifer forms an effective impermeable boundary to further vertical ground water flow. Most of the

surface water that recharges the ground water beneath the Reservation is stored and transmitted in the Va and SLa.

Most of the ground water recharge at the Reservation occurs in the central, relatively flat portion of the Reservation. Once the water reaches the water table in the Va, a portion of the water moves radially away from the area of recharge, generally in the direction of topography. A portion also moves vertically downward into the SLa. Ground water elevation contour maps (potentiometric surface maps) for the Va and SLa indicate radial flow (Didricksen, 2001). Shallow perched ground water within or above the Va may discharge as seeps on steep slopes. Deeper ground water in the Va and SLa discharges into the bays on the north, west and south, and to the channel on the east (Appendix 1). Deep ground water that migrates below sea level near the center of the Reservation, tends to flow upward and discharge into the surrounding salt-water bays. The saline or brackish water in the subsurface perimeter of the Reservation forms a discharge boundary.

The pattern of ground water elevations indicates that ground water discharges as base flow into three streams on the Reservation: Munks Creek, Fornsby Creek and Snee-Oosh Creek (Appendix 1). Didricksen (2001) estimated the total baseflow from the three streams at 281,000 gallons per day (gpd) or 38,000 cubic feet per day (ft^3/d). Surface water in these streams discharges into the bays and channel surrounding the study area.

Based on recent ground water withdrawal estimates, well pumping removes approximately 106,000 gpd (14,100 ft^3/d) of water from reservation aquifers. Assuming that 9 inches of water infiltrates the 7,344-acre Reservation every year, the total ground water recharge is more than 770,000 ft^3/d. The majority of water that infiltrates to ground water discharges into the surrounding marine environment along the perimeter of the Reservation.

4.0 DELINEATION OF WELLHEAD PROTECTION AREAS

Wellhead protection areas (WHPAs) are identified to represent the area that ground water pumping could potentially "capture" surface contaminants that migrated downward from the surface into ground water. The WHPA size, therefore, is proportional to the aquifer pumping rates, and a function of aquifer characteristics. WHPA delineation requires a valid conceptual model of ground water flow, aquifer characteristics, and a reasonable estimate of pumping rates. Calculating the size of a WHPA typically requires an analytical or numerical simulation to estimate the capture area based on average ground water flow and aquifer pumping conditions.

4.1 WHPA DELINEATION MODEL

HWA used EPA's Wellhead Analytic Element Model, WhAEM2000, to determine the WHPA for the SUA water supply wells. WhAEM2000 is a numerical computer model that facilitates capture zone delineation.

4.2 BACKGROUND AND PURPOSE:

The SUA wells currently are designated for emergency supply, but potentially could sustainably yield a combined rate of approximately 200 gallons per minute (gpm). For the purposes of establishing WHPAs around the wells, capture zones were determined for one year (365 days), five years (1825 days), and ten years (3650 days).

4.3 OVERVIEW OF WHAEM2000

The model assumes the following conditions for input:

- Pumping wells that fully extend across the aquifer thickness and pump at a constant rate
- Fixed hydrogeological boundaries (bedrock, Skagit Bay, Swinomish Channel)
- Uniform aquifer parameters (thickness, hydraulic conductivity, porosity, hydraulic gradient

WhAEM 2000 uses site-specific parameters to simulate current conditions without ground water pumping. The user then simulates ground water pumping at the wellhead location. If the simulated pumping scenario reasonably matches known or projected steady-state conditions, the user then incorporates a particle-tracking operation to determine travel distances within the aquifer over a specified time. The particle-tracker module in the program uses hydraulic gradients around the pumping wells to calculate

horizontal ground water flow velocities. The module then calculates the flow path of a particle that would reach the wells in a 1-, 5-, and 10-year period of ground water pumping. WhAEM 2000 tracks the particles backward from the well to the point of origin for each of the time simulations. Capture zones for each time-period are delineated by connecting the end point for each particle with a line to create an enclosed polygon surrounding the well. This polygon represents the estimated maximum distance (capture zone) that particles would migrate into a pumping well within a specified time.

4.4 CALIBRATION

Before calculating capture zones for the reservation pumping wells, HWA calibrated the steady-state model using the site conceptual model as a starting point. The Reservation is a good candidate for a steady-state simulation because site-wide water levels vary little through out the year. HWA calibrated the model by establishing constant values for aquifer thickness and elevation, ground water elevations at the model boundaries, and hydraulic conductivity, while varying hydraulic recharge. The model was considered calibrated once the simulated potentiometric surface for the SLa (Figure 3) reasonably matched the ground water elevation contours observed and mapped by Didricksen (2001; Appendix 1). This calibration included the assumption that groundwater occurs at an elevation of 60 feet above mean sea level near the pumping wells.

4.5 STEADY-STATE SIMULATION

The SLa is a hydraulically confined sand and gravel aquifer ranging in thickness from zero to 40 feet, with an average thickness of 14 feet. Didricksen (2001) estimated at 20-foot thickness for the aquifer near pumping wells #2 and #3.

Estimated hydraulic conductivity values in the SLa range from 4 feet per day (ft/d) to 938.8 ft/d (Didricksen, 2001). Fifty percent of these values fall between 10.3 ft/d and 134.7 ft/d, with a median value of 25.8 ft/d. The hydraulic conductivity values estimated from short-term pumping tests at wells #2 and #3 are 860 ft/d and 138.7 ft/d respectively. These tests tend to over-estimate hydraulic conductivity. However, the model would not calibrate using initial values between 50 ft/d and 500 ft/d and a maximum recharge rate of 12 inches per year. Further refinement of hydraulic conductivity input values based on simulated potentiometric surface contours resulted in an optimal value of 25 ft/d. This value compares favorably to the median hydraulic conductivity for the aquifer, and adequately represents wide-ranging hydraulic conductivity values in the SLa.

HWA used a fixed ground water elevation boundary set at zero feet above mean sea level to simulate discharge from the SLa into the marine environment. This boundary is consistent with the conceptual model for the Reservation.

The conceptual model for the Reservation includes an estimated 9 to 12 inches of ground water recharge per year. The actual recharge to the SLa is likely less than 9 inches per year, since much of the ground water flowing within the overlying Va discharges horizontally rather than vertically into the SLa. Holding all other input values constant, the model calibrated using a recharge value of 8 inches per year.

For the steady-state simulation, wells #2 and #3 each pumped 19,000 gpd (approximately 200 gpm). This was the maximum steady state pumping rate possible that would not de-water the aquifer at the wells.

The effective porosity of the sand and gravel SLa, ranges from 20 to 30 percent. HWA used a minimum value of 20 percent to conservatively estimate the largest possible capture zones. Particle velocities in ground water are inversely proportional to porosity; faster travel times and larger WHPAs result from smaller values of aquifer porosity.

4.5.1 Model Input and Assumptions

Simulation for the SLa used the following inputs:

- Base elevation of aquifer = -15 feet above mean sea level
- Thickness = 20 feet
- Hydraulic Conductivity = 25 feet/day
- Effective porosity = 0.20
- Fixed ground water elevation boundary used along border of island set to zero feet above mean sea level.
- Pumping Rate for the wells = 197 gpm
- Recharge = 8 inches per year
- homogeneous, uniform aquifer with a constant thickness.
- fully penetrating well screens

4.6 RESULTS

One-year, five-year and ten-year capture zones were estimated using particle tracking under pumping conditions (Figure 4). The resulting capture zones are oval-shaped with the long axes of the ovals are oriented north/south, parallel with the long axis of the island. The capture zones are generally centered over the two pumping wells, although

offset slightly up-hydraulic gradient to the east (Figure 4). The long axis of the 10-year capture zone stretches approximately 4,800 feet north/south and 3,800 feet in the east/west direction. The five and one-year capture zones have 3,700 foot x 3,300 foot and 1,800 foot x 1,700 foot axes respectively. The ten-year time of travel area is considered the outer boundary of the WHPA.

Using an effective porosity value of 30 percent results in a 16 percent reduction in ground water velocity, travel distances, and capture distance. An effective porosity of 30 percent reduces the ten year capture zone by approximately 780 feet in the long axis (390 feet radially) and half that distance along the east-west axis.

Increasing the model hydraulic conductivity from 25 ft/d to 50 ft/d, results in no apparent change to the size of the 10 year capture zone. However, the simulated potentiometric surface decreases by approximately 20 vertical feet near the pumping wells. This drop does not appreciably increase the local hydraulic gradient, which would subsequently increase travel times within the aquifer, thereby enlarging the capture zone.

4.7 Model Limitations

The WhAEM 2000 numerical model assumes a homogeneous, isotropic aquifer with a constant thickness and radial groundwater flow to pumping wells. In reality, the hydraulic system beneath the Swinomish Reservation contains two aquifers of varying thickness and hydraulic conductivity, plus confining beds with heterogeneous hydraulic properties, and uncharacterized perched aquifers.

Wells #2 and #3 are located in a relatively horizontal portion of the SLa where the hydraulic gradient is nearly flat. In this area, it is also reasonable to assume a uniformly thick aquifer, in the absence of other hydrogeologic data from well logs. The high contrast in permeability between the sand and gravel SLa and its silty confining beds suggests that ground water within the SLa flows preferentially in the horizontal direction. It is unlikely, therefore, that significant quantities of ground water would flow vertically from adjacent aquifers during pumping.

The steady-state model solution assumes the hydraulic boundaries and ground water elevations in the ground water system are in equilibrium. In reality, seasonally variable infiltration results in seasonally variable aquifer recharge and ground water elevations. Pumping rates would also vary with diurnal and seasonal demand. In order to compensate for these variations, HWA sought the greatest possible (most conservative) WHPA and used the maximum sustainable rate that will allow all the simulated boundary conditions to be in steady-state equilibrium without de-watering the aquifer. In addition, current and projected water-supply demands indicate that it is unlikely that wells #2 and #3 would be pumped at a sustained rate of 200 gpm for more than one year under

emergency conditions. These long-term steady-state pumping rate also present a "worst case scenario" resulting in the largest pumping well capture zone possible under maximum pumping rates.

WhAEM 2000 simulates pumping with uniform, radial flow to wells with fully penetrating screens. The screen in pumping well #2 extends across the thickness of the SLa, while pumping well #3 stretches approximately two-thirds of the way across the aquifer's vertical profile. Approximating a fully-penetrating screen for well #3 should not affect the resulting capture zone's extent, because the relatively high hydraulic conductivity and thin profile of the SLa.

5.0 CONTAMINANT SOURCES INVENTORY

5.1 METHODOLOGY

The potential contaminant sources inventory documents the practices, types, and quantities of use of actual and potential hazardous or toxic materials within the WHPA. The inventory methodology consists of:

- identification of historical and current land uses.
- a review of several government agency land use databases (EDR, 1998, 2001)
- obtaining landowner and land manager-provided anecdotal information regarding land use and potential contaminant use in the WHPA
- a site visit to inspect the integrity of the wellheads and to inspect the WHPA for actual and potential contaminants

5.1.1 Land Use

The risk or likelihood of ground water contamination in the WHPA depends on the historical and current land use in the WHPA. The SUA wells are on tribal trust lands. The 1-year Time of Travel area extends slightly beyond the tribal trust lands onto adjacent individual trust land. The 5- and 10-year time of travel areas extend approximately one-half mile outward from the wells onto both fee and trust lands.

All of the land within the WHPA is classified for natural resource land uses including timber production and processing, watershed management, ground water protection, recreation, and fish and wildlife conservation. No commercial or industrial activities historically occurred or currently occur in the WHPA.

Actual contaminant sources. These sources may consist of point sources including landfills, septic systems, industrial or commercial facilities, and non-point sources including documented releases of contaminants from agricultural lands or roads. Point sources typically are documented in agency land use databases, whereas non-point source identification requires knowledge of the area.

Potential contaminant sources. These sources may consist of undocumented point sources of contamination including:

- chemical use at home repair or maintenance shops

- abandoned landfills or illegal waste dumps
- abandoned or failing septic systems
- improperly constructed or abandoned wells
- accidental unreported spills of contaminants along roads or during historical land uses (e.g., logging).

Identification of these potential contaminant sources requires field verification and inspection to evaluate their potential for ground water contamination. Potential contaminant sources also include future releases of contaminants from activities that may occur within the WHPA. Assuming no changes to the current land use in the WHPA, these activities may include transportation, operation of utilities, or logging.

5.1.2 Government Agency Land Use Database Search

HWA subcontracted Environmental Data Resources, Inc. (EDR) of Southport, Connecticut, to perform the government agency electronic database search. EDR constrained their search of Washington State and US Federal databases to records of historical and current uses or releases of known or potential contaminants in an area extending two miles from the Tribe water supply wells (EDR, 2001). The review indicated that within the 1-, 5-, or 10-year time of travel zones in the WHPA, no current or historical land uses or activities using potential contaminants are recorded by state or federal agencies. This review confirms the findings of the *Level One Environmental Property Assessment, Swinomish Channel Marina* (HWA, 1998). The EDR and HWA reports identified one manufacturing facility that historically used hazardous materials and one auto retailer that currently uses hazardous materials at a distance of more than two miles north of the WHPA. HWA (1998) also identified petroleum and natural gas pipelines that traverse the north end of Reservation lands, although more than one mile north of the WHPA.

5.1.3 SITC Personnel Knowledge of Land Use

HWA interviewed SITC personnel to discuss historical and current land uses in the WHPA. The personnel indicated that nearly all of the land in the WHPA is undeveloped. Based on their knowledge of historical and current land uses, SITC personnel concluded that no known contaminants were used or released in the WHPA. No known accidental spills of contaminants were reported for the WHPA.

5.1.4 Site Inspection

HWA inspected the area of the WHPA on August 14, 2001. HWA confirmed the low density residential land use throughout the WHPA. HWA observed no potential sources of contaminants in the accessible portions of the WHPA.

HWA observed the wellhead (see photos in Appendix 3) and concluded that the wellheads were secure from potential sources of surface contamination. The wellheads were intact and located a sufficient distance from the access road to minimize potential non-point source contamination from the road or adjacent ditch.

5.2 Actual Contaminant Sources

No historical or current actual contaminant sources were documented for the WHPA. The nearest documented use of hazardous chemicals is two miles north of the wells, beyond the 10-year time of travel area.

The PM Northwest site, a refinery waste dump site, lies 1.5 miles northeast of the wells, approximately 1 mile beyond the limit of the 10-year time of travel area (Figure 4). Historical and current activities at the PM Northwest site are not considered a potential threat to ground water in the WHPA.

The Ericksen and Svendsen Mill site sand and gravel quarry lies 1 mile east of the wells, approximately ¼-mile beyond the limit of the 10-year time of travel area (Figure 4). Historical and current activities at the PM Northwest site are not considered a potential threat to ground water in the WHPA.

5.3 Potential Contaminant Sources

The following summarizes potential contaminant sources that consist primarily of unknown historical or future releases of contaminants in the WHPA. The potential sources are listed in order of likely occurrence and risk to the ground water supply.

5.3.1 Transportation and Underground Utilities

Reservation Road is the primary transportation route that crosses the WHPA. Accidental releases of petroleum, antifreeze or other chemical compounds from vehicles potentially could runoff Reservation Road or secondary roads, infiltrate into soil, and migrate to ground water. Transportation is the primary activity in the WHPA. Use of Reservation Road, therefore, is the most likely potential source of contamination to the WHPA.

Contaminants potentially may be released during repair, construction, or maintenance of Reservation Road or underground utilities (water, sewer, and communication lines) constructed next to Reservation Road. Transportation and utility management practices

may include re-paving, excavation, and vegetation control. Potential contaminants include accidental release or misuse of petroleum compounds, herbicides, and pesticides.

5.3.2 Abandoned Landfills and Illegal Waste Dumping

No abandoned landfills or waste dumps are known to exist in the WHPA. Illegal dumping of wastes could occur within the WHPA, potentially resulting in the infiltration of potential contaminants into soil and their migration to ground water. Because Reservation Road provides ready access to the WHPA, illegal dumping is considered a significant potential source of contamination.

5.3.3 Silviculture

All of the lands in the WHPA have been logged and are covered by re-growth. Accidental release or misuse of potential contaminants (petroleum, herbicides, and pesticides) may occur should silvicultural practices resume within the WHPA,

5.3.4 Other Wells in WHPA

According to SITC records, several domestic wells exist near the WHPA. The condition and use of these wells is unknown. The wells, which are completed in the Va and SLa, are shown in Appendix A. Improper well seals may provide direct conduits for surface contaminants to migrate into deep aquifers

5.3.5 Residential Use and Septic Systems

No residences occur within the WHPA, which potentially could generate or release household hazardous wastes, and no septic systems have been installed in the WHPA.

5.3.6 Commercial Enterprises

No commercial or industrial enterprises have occurred or exist in the WHPA.

6.0 AQUIFER SUSCEPTIBILITY AND CRITICAL RECHARGE AREAS

6.1 AQUIFER SUSCEPTIBILITY

Aquifer susceptibility is a relative measure of the potential for surface activities to contaminate drinking water supply aquifers. The DOH developed guidelines for susceptibility assessments for Group A water systems. The aquifer susceptibility rating (low, moderate, and high) is based on evaluation of the following criteria or critical factors:

- Hydrogeologic susceptibility (aquifer permeability, aquifer recharge rates, depth to ground water)
- Current ground water quality (nitrate and organic chemical concentration)
- Well construction materials and methods,
- Types and quantities of potential contaminants used at the surface.

The Va is unconfined and ground water occurs at a depth of 125 feet. The SLa is confined and ground water occurs at a depth of approximately 200 feet. The depth to ground water at SUA wells #2 and #3 is approximately 250 feet, which is sufficiently deep to provide a buffer against potential contamination from surface activities. The shallower Va is more susceptible, as it is closer to the surface.

Didricksen (2001) reported that nitrate concentrations detected in a selection of all wells at the Reservation range from below detection limits to 3.7 milligrams per liter, equivalent to parts per million (ppm). No data indicating organic compound concentrations in the Va or SLa were available. Organic compound concentrations are expected to occur at trace levels or below laboratory detection limits due to the limited use of solvents, paints or other chemicals on the Reservation.

Didricksen (2001) identified areas of low, moderate and high recharge rates for the Reservation based on soil types and geologic unit characteristics. A map showing the areal distribution of recharge rates is included in Appendix 1. Most of the upland areas of the Reservation are covered by low permeability glacial till, which restricts surface water infiltration. Recharge rates at most of the central area of the Reservation, therefore, is less than 9 inches per year, a relatively low value. The greatest thickness of the till and maximum depth to ground water occur at the center of the Reservation, which coincides with the SUA wells. With decreasing till thickness and topographic elevation, ground water recharge rates increase. Where till is absent, primarily on the slopes and plateaus

above the lowlands at elevations ranging from 100 to 200 feet above sea level, recharge rates and aquifer susceptibility is highest. Where till occurs on steeper slopes, aquifer susceptibility is lowest due to high rates of runoff. Flat areas, even those covered by glacial till, are assumed to have relatively moderate aquifer susceptibility, because surface precipitation collects upon and infiltrates into the soil in these areas.

The SUA water supply wells were constructed in accordance with *Minimum Standards for Construction and Maintenance of Wells* (Chapter WAC 173-160). These standards promote methods to minimize potential aquifer contamination during well construction and provide well design criteria to minimize surface contamination along the well boring.

Based on these criteria or critical factors, the aquifer susceptibility of the SLa would receive a "low" susceptibility rating, and the aquifer susceptibility of the Va would receive a "moderate" susceptibility rating.

6.2 CRITICAL AQUIFER RECHARGE AREA

The DOH requires counties to identify and protect vulnerable ground water resources in critical aquifer recharge areas (CARAs). Skagit County has not formally established CARAs for the Reservation. The criteria typically used to establish CARAs relate to soil type, depth to ground water, and the permeability of the unsaturated zone. The DOH suggests using the 5-year time of travel area to establish a CARA around a public water supply well or wellfield. The WHPA identified in this WHPP would meet the criteria for establishing a CARA at the Reservation.

7.0 MANAGEMENT STRATEGY

This section identifies available policies for implementing the Swinomish WHPP management strategy and specific approaches for management that would reduce the potential for land use activities to affect the ground water resource.

Identification and establishment of the time of travel zones in the SUA Wellfield WHPA directs the management in these zones. The DOH recommends the following management for these zones:

Zone 1 (One-year time of travel area): protect the drinking water supply from viral, microbial, and direct chemical contamination.

Zone 2 (Five-year time of travel area): control potential contaminants by addressing potential sources, emphasizing pollution prevention, and reducing risk.

Zone 3 (Ten-year time of travel area, the outer boundary of the WHPA): exclude the siting of future "high" and "medium" risk potential sources from the WHPA.

7.1 POLICIES FOR MANAGEMENT OF THE WELLHEAD PROTECTION AREA

Potential aquifer contamination by surface activities in the WHPA poses the greatest risk to the drinking water resource. The Tribe, therefore, should focus its ground water management efforts on activities occurring in and near the WHPA. Annual water quality and pump testing would confirm the availability of the ground water resource as an emergency supply.

Education and awareness of the WHPA for Tribal administrators and community members provides the greatest return in wellhead protection. Currently, no residences exist in the WHPA, therefore, no direct residential notification is necessary. A knowledgeable and committed public, however, will support or strive to help protect their community drinking water resource. Ordinances, advertised policies and public information programs provide the most effective mechanisms for educating the public. Existing ordinances and policies available to the Tribe include:

- Water Resources Protection Ordinance
- Water Use Permitting

Seawater Intrusion Policy

Water Conservation Policy

Wellhead Protection Policy

- Critical Areas Protection Ordinance – Wellhead Protection and Aquifer Recharge
- Health and Sanitation Ordinance

  Well Construction and Well Abandonment Policy

  Water Conservation Policy

  Wellhead Protection Policy

- Utility Ordinance

  Water Supply and Expansion

The Tribe should develop guidelines in the use of these ordinances and policies for wellhead protection and inform Tribal administrators and employees on methods to incorporate wellhead protection ordinances and policies into day to day operations.

7.2 CONTAMINANT SPILL & RESPONSE PLANNING

Section 5 identified accidental spills and illegal dumping of potential contaminants along Reservation Road or secondary roads crossing the WHPA as the greatest risk to the underlying aquifers. Rapid response to contaminant releases may prevent ground water contamination. Automotive chemicals (petroleum, antifreeze), household hazardous waste (cleaners, solvents, paints), and agricultural or silvicultural chemicals (pesticides, herbicides) pose the greatest threat to ground water.

The first steps in spill response includes notifying the Spill Response Coordinator and the Spill Response Team:

7.2.1 Swinomish Spill Response Coordinator

The Swinomish Police Department serves as the initial point of contact for any emergency response.

Swinomish Police Department

Contact: [???]

Phone: [???]

7.2.2 Swinomish Spill Response Team

A potential contaminant spill or the discovery of illegal dumpsite would also activate a Swinomish Spill Response Team consisting of:

Office of Planning and Community Development

Contact: [???]

Phone: [???]

Swinomish Health Division

Contact: [???]

Phone: [???]

Skagit County Department of Emergency Management

Contact: [???]

Phone: [???]

7.2.3 Contaminant Spill Response

The Office of Planning and Community Development should develop Emergency Response Procedures, Training and Community Notification Protocols. Below, we suggest likely communications and actions necessary for a contaminant spill response.

Contaminant Spill Response Notification Tree:

In the event of a contaminant spill or discovery of an illegal dumpsite in or near the WHPA, the following agencies should be contacted in the following order, depending on the nature of the types and quantities of potential contaminants that pose immediate or long-term risks to public health.

1. Swinomish Police Department – Spill Response Coordinator
   Daytime: [???]
   Nighttime: [???]

2. Swinomish Indian Tribal Community

3.Swinomish Health Division

4.Skagit County Department of Emergency Management

5.Skagit County Sheriff

6.Swinomish Utility Authority

7.Skagit County Health Department

8.Ecology Emergency Response, Northwest Regional Office

9.Bureau of Indian Affairs

10. Environmental Protection Agency, Emergency Response

11. Environmental Protection Agency, Drinking Water Division

Contaminant Spill Response Procedures

In the event of a contaminant spill, the first responsible agent on the site should:

- Report the incident as soon as possible
- Contact other emergency response individuals, agencies
- Rescue/Evacuation
    * Identify those in need, and locations
    * Notify response hospitals
- Establish Incident Command
- Size up area of impact, identify contaminants involved:
    * Note wind direction and ground surface gradients
    * Observe from safe distance and approach the scene only if safe.
    * If not, wait for more qualified emergency response personnel.
    * Examine placards and labels
    * Identify chemicals involved
    * Interview on-scene witnesses
    * Examine papers
    * Refer to guidebooks

- Isolate area

    * Establish Control Line
    * Eliminate/Avoid Ignition Sources
    * Determine Excavation Needs

- Keep personal health and safety the highest priority

    * Spill response personnel should receive protection training
    * Spill response personnel should use protective equipment

- Determine best short-term remedial option to protect the ground water supply while maintaining personal health and safety

- If the SUA relies upon the ground water resource at the time of the incident, it may be necessary to shut the water supply system down to avoid causing preferential migration of contaminants through the aquifer system to the well. The SUA would need to declare the water supply unsuitable for domestic consumption.

    * Notify water supply recipients of emergency
    * Provide water supply recipients with instructions on flushing and disinfecting contaminated supply lines
    * Discuss long-term remedial goals with Office of Planning and Community Development

- Evaluate success of the emergency response and propose procedures for improvement

- Assist with locating and isolating source of contamination

- Assist where applicable with repair and/or removal of source of contamination

7.3 ABANDONMENT OF UNUSED DOMESTIC WELLS

A lesser risk to the ground water resource in the WHPA is the potential for surface water and contaminants to migrate along the well borings of improperly sealed or unused wells. These wells could potentially create conduits for surface contaminants to reach aquifers.

Specific management strategies by the Tribe include:

- Conducting a detailed survey of all properties near the WHPA to identify the presence of all wells and the condition of those wells.

- Arrange for eventual sealing of improperly sealed wells in use and abandonment of unused wells.

- Educate and inform all residents and business owners of the risk of improperly sealed or unused wells.

7.4 RESIDENTIAL AREA CONSIDERATIONS

Most land in the WHPA is undeveloped, but some land may convert to residential use in the future. Should this occur, a moderate risk of contamination may result if homeowners do not take reasonable care in using, storing and disposing of hazardous household, automotive or landscaping chemicals.

Specific management strategies include:

- Minimize contaminant-laden stormwater from residential areas from misuse of pesticides, herbicides and fertilizers by informing residents via flyers, brochures, etc., to encourage conservation and limited use of chemicals on lawns and landscaping.
- Inform residents on the proper disposal of chemicals such as paints, fuels, cleaners etc.
- Encourage participation in household hazardous waste pick up programs.
- Place "Wellhead Protection Area" signs along roads crossing the WHPA. This raises public awareness and provides for easy identification of the protection zone boundaries in case of contaminant spills.

7.5 SEPTIC TANKS & DRAINFIELDS

Future residences in the WHPA may include septic tank and drainfield construction, which could create potential sources of contamination within the WHPA. Improper disposal of household or automotive chemicals in septic tanks can result in eventual contamination of the aquifers.

Specific management strategies include:

- Septic tanks require regular maintenance including routine pumping in order to reduce their potential as a source of contamination. The Tribe should develop or continue to improve a septic tank management program to assure that all septic tanks and drainfields function as intended.
- Establishing an education program to (i.e. flyers, brochures etc.) for existing and new septic system users to inform the community of the importance of good septic tank and drainfield maintenance and proper hazardous chemical disposal.

7.6 COMMERCIAL AND INDUSTRIAL AREA CONSIDERATIONS

In general, commercial and industrial activities pose a greater threat to ground water than do residential uses due to the greater quantities of chemicals used in their operations. Should commercial or industrial activities commence in the WHPA, specific management strategies would include:

- Establishing ordinances and policies to keep commercial or industrial activities that use hazardous chemicals as a routine part of their operations (i.e. auto repair shops, printing shops, plating facilities, etc.) out of the WHPA.
- Requiring all commercial and industrial businesses near the WHPA to provide a list of the chemicals they routinely use in their day-to-day operations.
- Including all commercial and industrial businesses in educational/informational programs regarding the proper use, storage and disposal of hazardous chemicals.

7.7 PUBLIC PARTICIPATION & EDUCATION PROGRAM

As indicated in the above sections, the most important strategy for wellhead protection management consists of educating the community regarding the vulnerability of the ground water resource. Community participation in the wellhead protection program includes supporting the ordinances and policies necessary to achieve wellhead protection.

Specific actions to achieve public participation and education could include:

- Establishing a Wellhead Protection Area Committee consisting of agency representatives and residents/business owners near the WHPA. The committee would serve as the primary contact between the community within the WHPA and the Tribal government overseeing wellhead protection issues.
- Identify all publicly-accessible boundaries of the WHPA with informational signs.
- Prepare flyers and brochures to inform people/businesses near the WHPA that they can impact their own ground water resource and have a responsibility to protect it. Specific information would include:

    * The sources of current and future drinking water supply
    * Use, storage, and disposal of chemicals that may threaten ground water quality
    * Importance of properly maintaining septic tanks
    * What to do in the case of a contaminant spill
    * How improperly sealed and unused wells threaten ground water quality

- Send out a letter to all residents/businesses near the WHPA notifying them of the WHPA boundary and common chemicals (petroleum, solvents, paints, etc.) that may threaten the ground water resource.

- The Wellhead Protection Area Committee may periodically hold public meetings to inform the public of wellhead protection issues, particularly spill response plans and contingency water supply plans.

8.0 CONTINGENCY PLAN FOR ALTERNATIVE WATER SUPPLY SOURCES

At this time, most of the SUA water is supplied by an intertie agreement with the City of Anacortes due to:

- the efficient cost of delivery (which is less than operating the Tribal wellfield)
- the undetermined risk of the Tribal wellfield to contaminant in-migration from the PM Northwest site
- the lack of invested infrastructure in the Tribal wellfield for an expanding service base
- the sufficiency of the Skagit River, the City of Anacortes supply source, to meet service needs well above in-stream flow needs for fisheries.

The Reservation ground water resource adequately meets current ground water withdrawals by individual domestic wells and small public water supply systems. The SUA wells appear capable of sustaining 200 gpm or 288,000 gpd, which would meet the water demand in case of a temporary loss of water from the City of Anacortes. The wells may be quickly brought on line should this contingency occur. No data exist projecting the potential capacity of the SLa (or the Va) to sustain long-term water supply demands for the entire Reservation.

In the event that one or more of the Tribe's wells becomes contaminated, the Tribe would need to identify alternate supplies for emergency backup. Ground water in the Va, SLa, and Ua at other areas of the Reservation may potentially provide an emergency or alternate ground water supply. Additional hydrogeologic evaluation would identify these areas.

An intertie agreement exists between SUA and Shelter Bay Utility District, which has an intertie agreement with the Town of La Conner. This intertie only benefits the SUA if the City of Anacortes water is still available to La Conner. Loss of the water supply at the Skagit River would affect Anacortes, La Conner, Shelter Bay, and the SUA.

A water supply intertie formerly existed with the Town of LaConner, but this line has not been used or maintained in several years. There are no current agreements for maintaining or servicing the intertie between LaConner and the Tribe. Assessing the integrity of the line would indicate the value of the intertie as an alternate water supply connection.

Should water quality testing in the SUA wells indicate contamination of the SLa, the SUA would need to:

- assess of the source, extent, and migration of the contamination
- evaluate the practicality of upgrading wellhead treatment to remove contaminants from water withdrawn from the contaminated aquifer
- if not already selected, identify an alternate ground water resource for emergency supply.

Should the political or economic conditions change such that the SUA began to withdraw ground water from its wells to augment or replace the existing water supply, the SUA would need to meet EPA water quality testing requirements. A new alternate water supply would have to be identified as a contingency supply. The SITC likely would require more stringent management of the WHPA should the SUA come to depend on the ground water resource for public water supply.

9.0 REFERENCES

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10.0GLOSSARY

Abandonment of A Well: To remove a well from service by completely filling it in such a manner to effectively and permanently prevent the vertical movement of water within the wellbore and within the annular space surrounding the well casing.

Annular Space: The cylindrical space between the drillhole wall and the outer well casing.

Aquifer: a) A ground water-saturated and permeable geological formation, group of formations, or part of a formation that is capable of transmitting water in sufficient quantity to supply wells or springs.

b) A geological formation, group of formations, or part of a formation that contains saturated and permeable material capable of transmitting water in sufficient quantity to supply wells or springs; the terms water bearing zone or water bearing stratum are synonymous with the term aquifer.

c) An underground stratum holding water which is capable of yielding a significant amount of water to a well or spring.

Aquifer Parameter: A characteristic of an aquifer, such as thickness, porosity or hydraulic conductivity.

Aquitard: A geologic unit with low hydraulic conductivity, capable of transmitting water at low rates, but not at rates sufficient for production wells.

Artesian Aquifer: An aquifer in which ground water is under sufficient head (pressure) to rise above the level at which it was first encountered whether or not the water flows at land surface. If the water level stands above land surface, the well is a flowing artesian well.

Bedrock: A general term for the consolidated (solid) rock that underlies soils or other unconsolidated surficial material.

Beneficial Use: The reasonably efficient use of water without waste for a purpose consistent with the laws, rules, and best interests of the people of the state.

Casing: The outer tubing, pipe, or conduit, welded or screw coupled, and installed in the borehole during or after drilling to support the sides of the wall and prevent caving, to shut off water, gas, or contaminated fluids from entering the hole, and to prevent waste of ground water. Casing does not include slotted or perforated pipe, well screens, or liner pipe.

Casing Seal: The watertight seal established in the wellbore between the well casing and the drillhole wall to prevent the inflow and movement of surface water or shallow ground water in the well annulus, or to prevent the outflow or movement of water under artesian or hydrostatic pressures.

Cement-Bentonite Grout (Slurry): A mixture of cement, bentonite, and water generally used as an annular sealant.

Chemical Analysis (Ground water): The determination of the concentration of dissolved inorganic and organic constituents, the values of chemical state parameters (e.g., pH, Eh, and temperature), and the physical properties (e.g., turbidity). The minimum chemical properties that are usually determined are: T, pH, hardness, specific conductance, dissolved solids, chloride, bicarbonate, iron, fluoride, and nitrate.

Cleanup: Includes, but is not limited to, the containment, collection, removal, treatment or disposal of oil or hazardous material; site restoration; and any investigations, monitoring, surveys, testing, and other information gathering required or conducted by Ecology.

Community Well: A well, whether publicly or privately owned, which serves or is intended to serve more than 15 connections for the purpose of supplying water for drinking, culinary, or household uses.
Community Water System: Public supply which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. Community public supply wells may be owned by a municipality or community, a water district, a corporation, a private individual or by a local, state, or federal government agency.
Conductivity (Chemical Analysis): The ability of water to transmit an electrical current. Conductivity is directly related to the abundance of ions in the water.
Cone of Depression: The depression of heads around a pumping well caused by the withdrawal of water.
Confining Unit: The impermeable stratum immediately overlying an artesian (confined) well. A layer of rock having very low hydraulic conductivity that hampers the movement of water into and out of an aquifer.
Consolidated Formation: Means materials that have become firm through natural rock forming processes. It includes material such as basalt, sandstone, hard claystone, conglomerate, and granite.
Contaminant: Any physical, chemical, biological, or radiological substance or matter in water which may render the water nonpotable.
Contaminant (Ground water): Any chemical, ion, radionuclide, synthetic organic compound, microorganism, waste, or other substance that does not occur naturally in ground water or that occurs naturally but at a lower concentration. (The introduction into the natural ground water environment of any chemical, organic material, live organism(s), wastes, radioactive, or other material that lessens the quality of the water, renders it unfit, and/or affects the intended use of the water.)
Contamination: An impairment of water quality by chemicals, radionuclides, biologic organisms, or other extraneous matter whether or not it affects the potential or intended beneficial use of water.
Contaminant Plume: The two-dimensional (map view) or three-dimensional form of contaminated ground water in an aquifer. The shape of the plume is controlled by ground water flow and by the transportation processes involved.
Contingency Plan: A document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment and is prepared pursuant to 40 CFR part 264.
Corrective Action: Remedial action taken to protect the present or future public health, safety, welfare, or the environment from a release of a regulated substance.
Decommission: To remove from operation an underground storage tank, including temporary or permanent removal from operation, abandonment in place, or removal from the ground.
Delineation: The determination of the extent, orientation, and boundaries of a wellhead protection area using factors such as geology, aquifer characteristics, well pumping rates, and time of travel
Detect, Detectable, Detection or Detected: To measure a contaminant by an established analytical technique in a laboratory using established quality assurance and quality control procedures such as 40 CFR 136.
Discharge: The volume rate of loss of ground water from the aquifer through wells, springs, or to surface water.
Dispersion: Spreading out of a contaminant in ground water by diffusion and mixing.
Disposal System: A system for disposing of wastes, either by surface or underground methods and includes municipal sewerage systems, domestic sewerage systems, treatment works, disposal wells, and other systems.

DOH: The Washington State Department of Health (DOH)
Domestic Well: A well used to serve no more than three residences for the purpose of supplying water for drinking, culinary, or household uses, and which is not used as a public water supply. (A water well used exclusively to supply the household needs of the owner/lessee and family. Uses may include drinking, cooking, washing, sanitary purposes, lawn and garden watering, and caring for pets.)
Downgradient Well: A ground water monitoring well which has been constructed at a point of lesser static head (downgradient) of an area of environmental concern for the purpose of detecting the migration of contaminants from this area.
Drawdown: The difference, measured vertically, between the static water level in the well and the water level during pumping.
Dump: A land site where solid waste is disposed of in a manner that harms the environment. Dumping is the indiscriminate disposal of solid waste.
Ecology: The Washington State Department of Ecology
Effective Porosity: The ratio of the volume of interconnected voids (openings) in a geological formation to the overall volume of the material.
Effluent: Sewage water, or other liquid, raw or partly treated flowing into a reservoir, basin, or treatment plant.
Emergency: A condition resulting from an unusual calamity such as a flood storm, earthquake, drought, civil disorder, volcanic eruption, an accidental spill of hazardous material, or other occurrence which disrupts water service at a public water system or endangers the quality of water produced by a public water system.
Environment: The air, water and land, and the interrelationship which exists among and between water, air, and land and all living organisms.
Federal Standard: A maximum contaminant level, a national primary drinking water regulation, or an interim drinking water regulation adopted by the EPA under the *Safe Drinking Water Act*.
Flow Line: The idealized path followed by particles of water.
Formation: A mappable geologic unit or units with definite lithologic characteristics.
Future Ground Water Sources: Means wells and/or springs that may be required by the public water system in the future to meet the needs of the system.
Generator: The person who, by virtue of ownership, management or control, is responsible for causing or allowing to be caused the creation of hazardous waste.
Governmental Entity: Any local, state, Indian tribe, or federal organization or agency which may own or manage lands or activities within a Wellhead Protection Area.
Gravel Pack (Filter Pack): The term applied to the inert, usually siliceous, material placed in and around the annular space between the borehole and a perforated casing or well screen to prevent the movement of finer material into the well.
Ground Water: Any water, except capillary moisture, beneath the land surface or beneath the bed of any stream, lake, reservoir, or other body of surface water within the boundaries of this state, whatever may be the geological formation or structure in which such water stands, flows, percolates, or otherwise moves.
Ground water Management Area: An area in which contaminants in the ground water have exceeded the levels established under this act (Section 24) and the affected area is subject to a declaration (Section 36).

Ground water Monitoring Program (Detection Monitoring): A monitoring well system capable of yielding ground water samples for analysis. Upgradient well(s) are installed to obtain representative samples of the background (unaffected) ground water. Downgradient wells are generally placed immediately adjacent to the area of concern to detect any constituents migrating into the ground water environment.

Ground Water Velocity: The rate of movement of ground water through an aquifer. Ground water velocity may vary considerably within a given aquifer. The average ground water velocity in the aquifer is defined as:
$v = (hydraulic\ conductivity \times gradient)/porosity$

Hazardous Material: Any substance known to present a physical or health hazard to people under normal conditions of use and/or during emergency use. Any chemical or material which is required to have a Material Safety Data Sheet under OAR 437 and ORS 453, or designated as such by the SFM.

Hazardous Waste: A substance defined by ORS Chapter 466.005 and or ORS 469.300. Storage or collection, the containment of hazardous wastes either on a temporary basis or for a period of years, in a manner that does not constitute disposal of the hazardous waste.

Hazardous Waste Disposal Site: Refers to a geographical site in which or upon which hazardous waste is disposed.

Hazardous Waste Generators: Generators of greater than 1,000 kg/month of hazardous waste (large quantity generators); generators between 100 and 1,000 kg/month hazardous waste (small quantity generators); and generators of less than 100 kg/month of hazardous waste (conditionally exempt small quantity generators or very small quantity generators).

Head: The energy possessed by the water mass at a given point, related to the height above a datum plane that water will rise in a well drilled to that point. In a ground water system, it is composed of elevation head and pressure head.

Hydraulic Conductivity (K): A parameter related to the ability of the aquifer to transmit water. Formally defined as the rate at which a unit volume of water at the prevailing viscosity will flow through a unit cross section of the aquifer under a unit hydraulic gradient in a unit of time.

Hydraulic Connection: Water that can move between a surface water source and an adjacent aquifer.

Hydraulic Gradient: Change in head per unit of distance measured in the direction of the steepest change.

Hydraulic Head: The energy possessed by the water mass at a given point, related to the height above the datum plane that water resides in a well drilled to that point. In a ground water system, the hydraulic head is composed of elevation head and pressure head.

Hydrogeologic Boundary: Means physical features that bound and control direction of ground water flow in a ground water system. Boundaries may be in the form of a constant head, e.g., streams, or represent barriers to flow, e.g., ground water divides and impermeable geologic barriers.

Hydrogeologic Mapping: Means characterizing hydrogeologic features (e.g. hydrogeologic units, hydrogeologic boundaries, etc.) within an area and determining their location, areal extent and relationship to one another.

Hydrogeologic Unit: A geologic formation, group of formations, or part of a formation that has consistent and definable hydraulic properties.

Hydrostratigraphic Unit: A layered geologic formation, group of formations, or part of a formation that has consistent and definable hydraulic properties.

Impermeable: A material that limits the passage of water.

Inactive Well: A well is considered to be inactive if it is not presently operating but is maintained in such a manner that it can be placed back into operation with a minimum of effort.

Industrial Wastewater: Any liquid, gaseous, radioactive, or solid waste substance, or a combination thereof resulting from any process of industry, manufacturing, trade or business, or from the development or recovery of any natural resources.

Infiltration: The downward movement of water of surface origin into the soil or rock formations.

Landfill: A facility for the disposal of solid waste involving the placement of solid waste on or beneath the land surface.

Leachate: Liquid that has come into direct contact with solid waste and contains dissolved and/or suspended contaminants as a result of such contact.

Leakage: Means leakage of surface and/or subsurface water around the well casing or within the well bore from one aquifer to another.

Material Safety Data Sheet: Written or printed material concerning a hazardous chemical which is prepared pursuant to OSHA rules.

Maximum Contaminant Level (MCL): Refers to the maximum possible level of a contaminant in water at which no known or anticipated adverse effect on health of persons would occur and which allows an adequate margin of safety. Defined as the maximum allowable level of a contaminant in water, which will not cause a public health risk when the water is delivered to the users of a public water system, except in the case of turbidity where the maximum allowable level is measured at the point of entry to the distribution system. Contaminants occurring in the water resulting from circumstances controlled by the water user except those resulting from corrosion of piping and plumbing caused by water quality are excluded from this definition.

Mitigation: Avoiding or minimizing losses of resource values by implementing structural or operational measures within the project area.

Monitoring Well: Any hole, however constructed, in naturally existing or artificially emplaced earth materials through which ground water is accessed to make judgments, determinations, observations, or measurements of water quality.

Natural Water Quality: Water quality that would exist as a result of conditions unaffected by human caused pollution.

New Ground water Sources: Means additional or modified wells and/or springs owned by the Public Water System.

Noncommunity Public Supply Well <EPA>: A public supply water well which serves either fewer than 15 service connections or fewer than 25 year-round residents or no year-round residents. Examples of the former case are small public water supplies for mobile home parks, subdivisions, etc., which fall below the 15 connections/25 persons criteria for community water supplies. The latter case includes water supplies which serve no year-round residents, such as lunges, motels, camps, office buildings, restaurants, rest stops, schools, etc.

Nonpoint Source: Diffuse or unconfined sources of pollution where contaminants can enter into or be conveyed by the movement of water into public water.

Nontransient Noncommunity Water System <EPA>: Means a public water system that is not a Community Water System and that regularly serves 25 or more of the same people for more than six months out of the year, e.g., schools, factories, and small residential systems.

Open Interval: Means in a cased well, the sum of the length(s) of the screened or perforated zone(s) and in an uncased (open-hole) well, the sum of the thickness(es) of the water-bearing zones or, if permeable, 10 percent of the length of the open hole.

Other Hole: A hole other than a water well or monitoring well, however constructed, in naturally occurring or artificially emplaced earth materials through which ground water can become contaminated.

Perched Ground water: Means ground water held above the regional or main water table by a less permeable underlying earth or rock material.

Permeability: The ability of material to transmit fluid, usually described in units of feet per day or gallons per day per square foot of cross-section area.

***pH*:** A mathematical expression of the hydrogen-ion activity. A measure of the acidity (pH < 7.0) or alkalinity (pH > 7.0) of a material.

Pesticide: Any substance or mixture of substances (including fungicides, herbicides, insecticides, nematocides, and rodenticides), intended for preventing, destroying, repelling, or mitigating any pest and any substance or mixture of substances indented for use as a plant regulator, defoliant, or desiccant.

Point Source: Any confined or discrete source of pollution where contaminants can enter into or be conveyed by the movement of water into the public waters.

Pollution (Water): Alteration of the physical, chemical, or biologic properties of any waters of the state, including change in temperatures, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life, or the habitat thereof.

Porosity: The ratio of the volume of voids (openings) in a geological formation being drilled to the overall volume of the material without regard to size, shape, interconnection, or arrangement of openings.

Potable Water: Water which is sufficiently free from biological, chemical, physical, or radiological impurities so that users thereof will not be exposed to or threatened with exposure to disease or harmful physiological effects. (Water whose bacteriological, physical, and chemical properties make it suitable for human consumption.)

Potential Contaminant Source: Any activity which has the potential to release contaminants to the ground water.

Potential Contaminant Source Inventory: The determination of the location within the wellhead protection area of activities known to use or produce materials that can contaminate ground water.

Potentiometric Surface: A surface that denotes the variation of hydraulic head in the given aquifer across an area.

Potentiometric Surface (Piezometric Surface): The level to which water will rise in tightly cased wells.

Public Water System: A system for the provision to the public of piped water for human consumption, if such system has more than 3 service connections or supplies water to a public or commercial establishment which operates a total of at least 60 days per year, and which is used by 10 or more individuals per day or is a facility licensed by the Division. A public water system is either a "Community water system", a "Transient Non-

Community water system", a "Non-Transient Non-Community water system" or a "State regulated water system".

Pump Test: The procedure involving pumping water for a specified period of time to determine the yield characteristics of an aquifer.

Recharge: The process by which water is added to a zone of saturation, usually by downward infiltration from the surface.

Recharge Area: A land area in which water percolates to the zone of saturation through infiltration from the surface.

Recovery: The rise in water level in a well from the pumping level towards the original static water level after pumping has been discontinued.

Redox Potential (Eh): An indication of the environment's tendency to cause oxidizing-reducing reactions. These reactions are important in controlling solubilities of minerals and transport of contaminants. Eh is also an important control in biodegradation processes that reduce contaminant concentrations.

Registered Well: An inventoried well that has been assigned an identification number by the Washington State Department of Ecology and/or the Swinomish Indian Tribal Community whose records are available.

Release: The discharge, deposit, injection, dumping, spilling, emitting, leaking, or placing of a regulated substance from an underground storage tank into the air or into or on land or the waters of the State, other than authorized by a permit issued under State or Federal law.

Remedial Action: Those actions consistent with a permanent remedial action taken instead of or in addition to, removal actions in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of a hazardous substance so that they does not migrate to cause substantial danger to present or future public health, safety, welfare, or the environment.

Reportable Quantity: An amount of oil or hazardous material which if spilled, released, or threatens to spill or release, in quantities that would trigger CERCLA and SARA Title III emergency release reporting requirements.

Responsible Management Authority: The Public Water System whose water supply is being protected and any governmental entity with management, rule or ordinance making authority to implement wellhead protection management strategies within a Wellhead Protection Area. Responsible Management Authorities are responsible for implementation of the Wellhead Protection Plan; includes cities, counties, special districts, Indian tribes, state/federal government entities as well as Public Water Systems.

Retardation: The movement of a contaminant at a velocity less than that of the water in the aquifer as a result of chemical or biological reactions.

Rock: Any naturally formed, consolidated or unconsolidated material (but not soil) consisting of two or more minerals.

Sanitary Survey <EPA>: An on-site review of the water source, facilities, equipment, operation, and maintenance of a public water system for the purpose of evaluating the adequacy of such source, facilities, equipment, operation, and maintenance for production and distributing safe drinking water.

Saturated Zone: The subsurface zone in which all opening are full of water.

Screened Interval: A depth interval in a cased well that is slotted or perforated and serves as the intake portion for water from the aquifer.

Sewage: Means water-carried human wastes, including kitchen, bath, and laundry waste from residences, buildings, industrial and commercial establishments, or other places, together with such ground water infiltration, surface waters, or industrial wastewater as may be present.
Sewage Treatment System: Any facility or equipment used to alter the quality of sewage by physical, chemical or biological means or a combination thereof such that the tendency of said wastewater to degradation in water quality or other environmental conditions is reduced.
Significant Adverse Impact: Any impact resulting in degradation of an important resource, that is unacceptable because it cannot be mitigated or because of unacceptable conflicts in management of use of the impacted resource.
Significant Hazard to Public Health <SDWA>: Any level of contaminant which causes or may cause the aquifer to exceed any maximum contaminant level set forth in any promulgated Nation Primary Drinking Water Standard at any point where the water may be used for drinking purposes or which may otherwise adversely affect the health of persons or which may require a public water system to install additional treatment to prevent such adverse effect.
Stakeholder(s): Means person(s) who could or will be affected by activities or requirements that may be required within a local wellhead protection area.
Solubility: The mass of a specific material, either solid, liquid or gas, that can be dissolved under specific conditions. Usually expressed as milligrams per liter.
Specific Capacity: The yield of a well per unit of drawdown.
Specific Retention: The ratio of the volume of water retained in a rock after gravity drainage to the volume of the rock.
Specific Yield: The ratio of the volume of water that will drain under the influence of gravity to the volume of saturated rock.
Spill or Release: The discharge, deposit, injection, dumping, spilling, emitting, releasing, leaking, or placing of any oil or hazardous material in the air or into, or on any land or waters of the state, except as authorized by a permit.
Sorption: The attaching of a component to the surface of a solid - either a mineral or organic particles.
Static Water Level: The stabilized level or elevation of the water surface in a well which is not being pumped.
Storage Coefficient: The volume of water released (or gained) from storage in the aquifer per unit area of aquifer per unit change in hydraulic head.
Stratification: Large scale layered structure in rocks, e.g., sedimentary rocks or lava flows.
Sump: A hole dug to a depth of 10 feet or less with a diameter greater then 10 feet in which water is encountered.
Time-of-Travel (TOT): The amount of time it takes ground water to flow to a given well. The criterion that effectively determines the radius in the calculated fixed radius method and the up-gradient distance to be used for the analytical and numerical models during delineation of the wellhead protection area.
Transmissivity: The rate at which water of the prevailing kinetic viscosity is transmitted through a unit width of an aquifer under a unit hydraulic gradient. It equals the hydraulic conductivity multiplied by the aquifer thickness.
Turbidity: A cloudy condition in water due to suspended silt or organic matter.

Unconfined Aquifer (Water Table): An aquifer in which the water table is the upper boundary. There is no confining layer between the aquifer and the surface and the pressure at the water table is atmospheric. Water level in an unconfined aquifer may move up and down in response to local recharge or discharge.

Unconsolidated Formation: Means naturally occurring, loosely cemented, or poorly indurated materials including clay, sand, silt, and gravel.

Underground Storage Tank: Any one or a combination of tanks and underground pipes connected to the tank, used to contain an accumulation of a regulated substance, and the volume of which, including the volume of the underground pipes connected to the tank, is 10 percent or more beneath the surface of the ground (e.g., excludes farm and residential tanks, heating oil tanks, septic tanks).

Unsaturated Zone: The subsurface zone, usually starting at the land surface, that contains both water and air.

Upgradient Well: One or more wells which are placed hydraulically upgradient of an area of concern and are capable of yielding ground water samples that are representative of the regional conditions and/are not influenced by the monitored area.

Volatile: The tendency to transform from the liquid or solid state to the gaseous state.

Water-Bearing Zone: Means that part or parts of the aquifer encountered during drilling that yield(s) water to a well.

Water Table: The upper surface of an unconfined water body, the surface of which is at atmospheric pressure and fluctuates seasonally. The water table is defined by the levels at which water stands in wells that penetrate the water body.

Well: Any artificial opening or altered natural opening, however made, by which ground water is sought or through which ground water flows under natural pressure, or is artificially withdrawn or injected. This definition shall not include a natural spring, or wells drilled for the purpose of exploration or production of oil and gas.

Wellhead Protection: Means implementing strategies within a wellhead protection area to minimize the potential impact of contaminant sources on the quality of ground water used a drinking water source by a Public Water System.

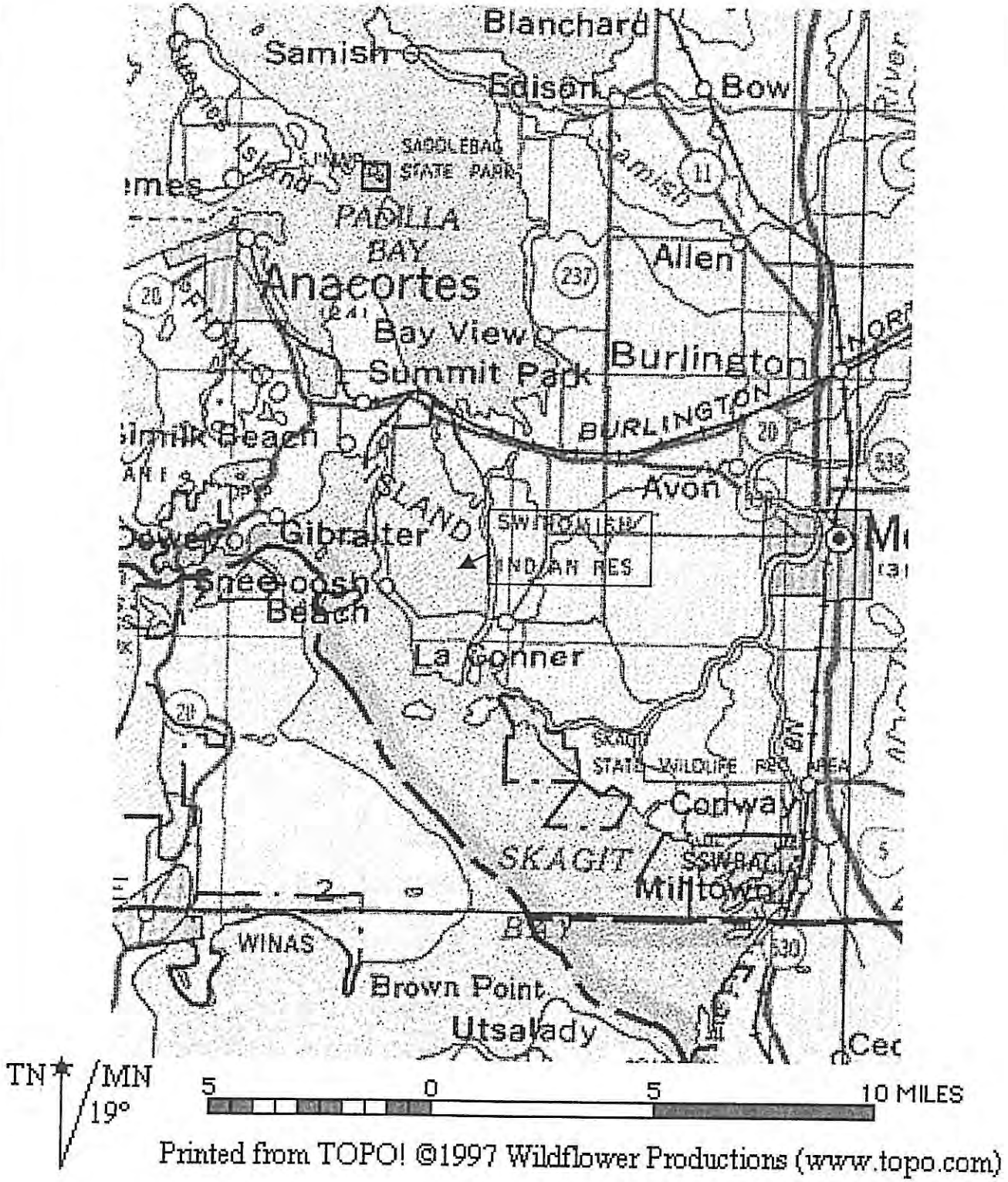
Wellhead Protection Area (WHPA): The surface and subsurface area surrounding a water well, spring or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach that water well, spring, or wellfield.

Wellhead Protection Plan: Refers to a Department certified plan which identifies the actions to be taken at the local level to protect a specific defined Wellhead Protection Area. The Plan is developed by the local Responsible Management Authority(ies) and/or team and includes a written description of each element, public participation efforts, and an implementation schedule.

Zone of Contribution (ZOC): Area surrounding a pumping well that includes all regions which supply ground water to the well. In other words, ground water within the ZOC boundaries will ultimately move to the well.

Zone of Influence (ZOI): The area surrounding a pumping well where the hydraulic head has been modified by the pumping.

FIGURES

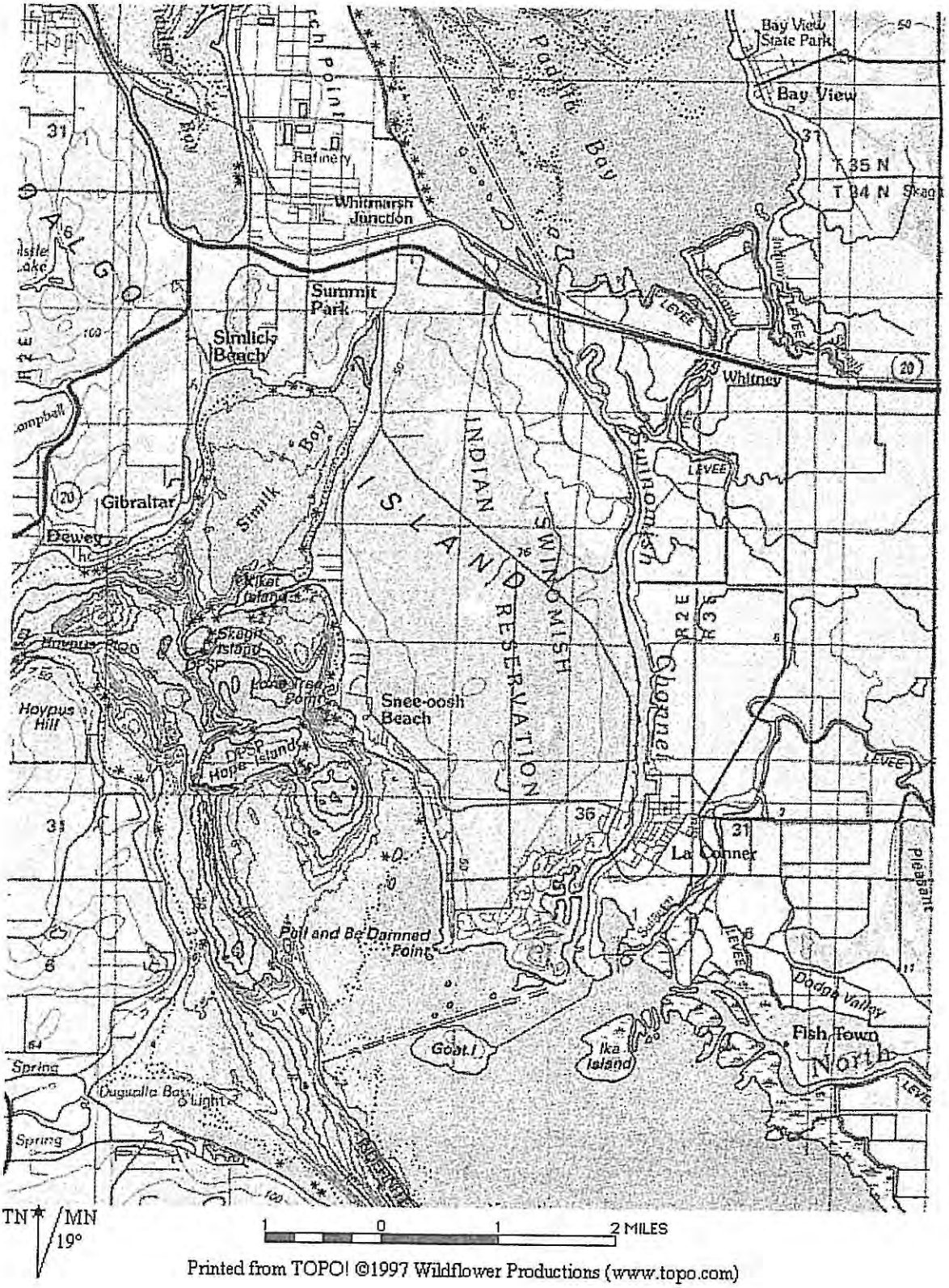


HWA GEOSCIENCES INC.

WELLHEAD PROTECTION PLAN
SWINOMISH INDIAN RESERVATION
LA CONNER, WASHINGTON

FIGURE 1
SITE VICINITY

PROJECT NO.: 2001 073



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HWA GeoSciences Inc.

WELLHEAD PROTECTION PLAN
SWINOMISH INDIAN RESERVATION
LA CONNER, WASHINGTON

FIGURE 2
SWINOMISH INDIAN RESERVATION

PROJECT NO.: 2001 073

FIG 2.DOC

APPENDIX A

GEOLOGIC MAPS AND CROSS SECTIONS

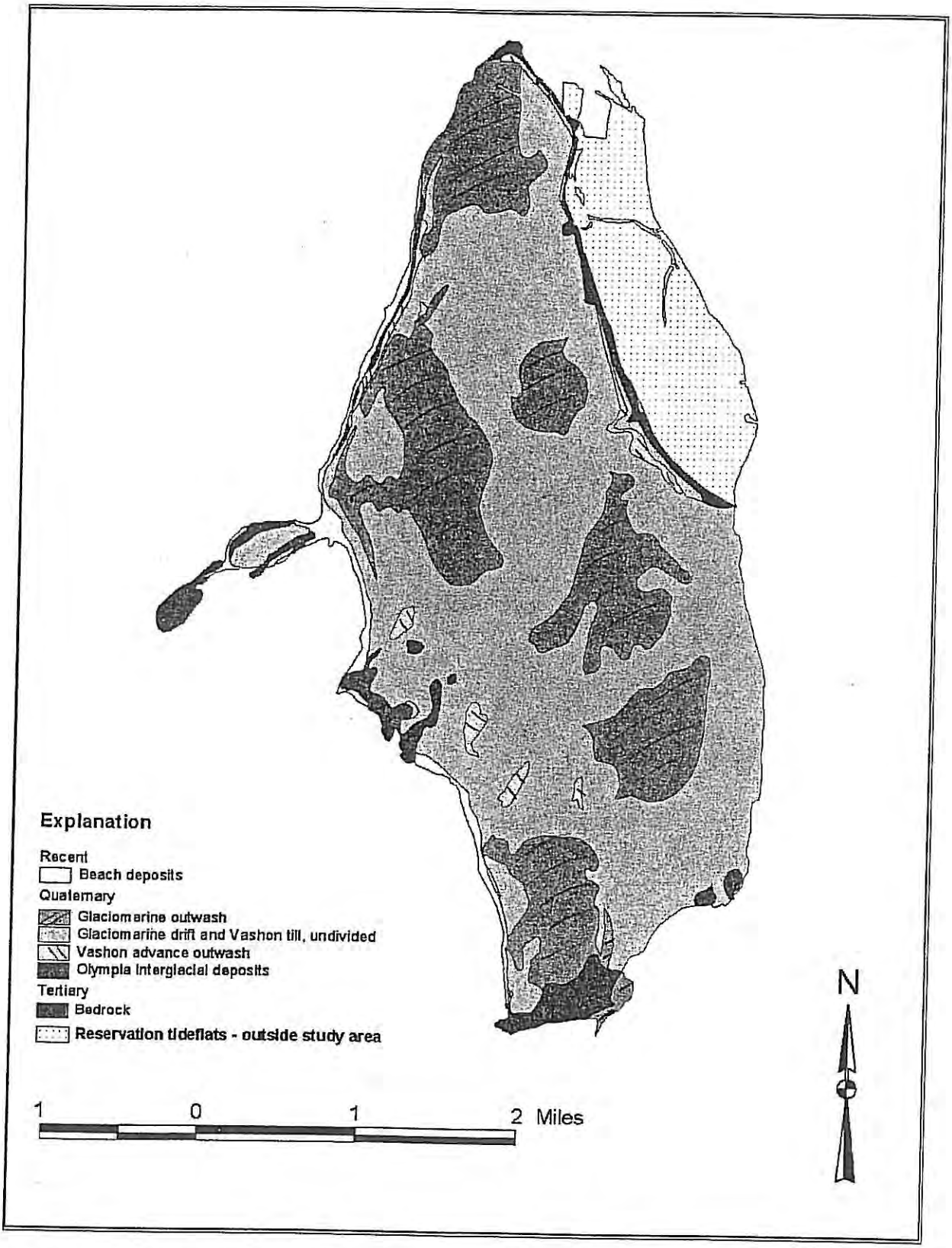


Figure 24. Generalized Surficial Geology

LOC-SECTIONS

ALWAYS THINK SAFETY

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

SWINOMISH INDIAN RESERVATION

LOCATION OF SECTIONS

DESIGNED KAYTI DIDRICKSEN TECH. APPR.
DRAWN RIC KROHN SUBMITTED
CHECKED APPROVED

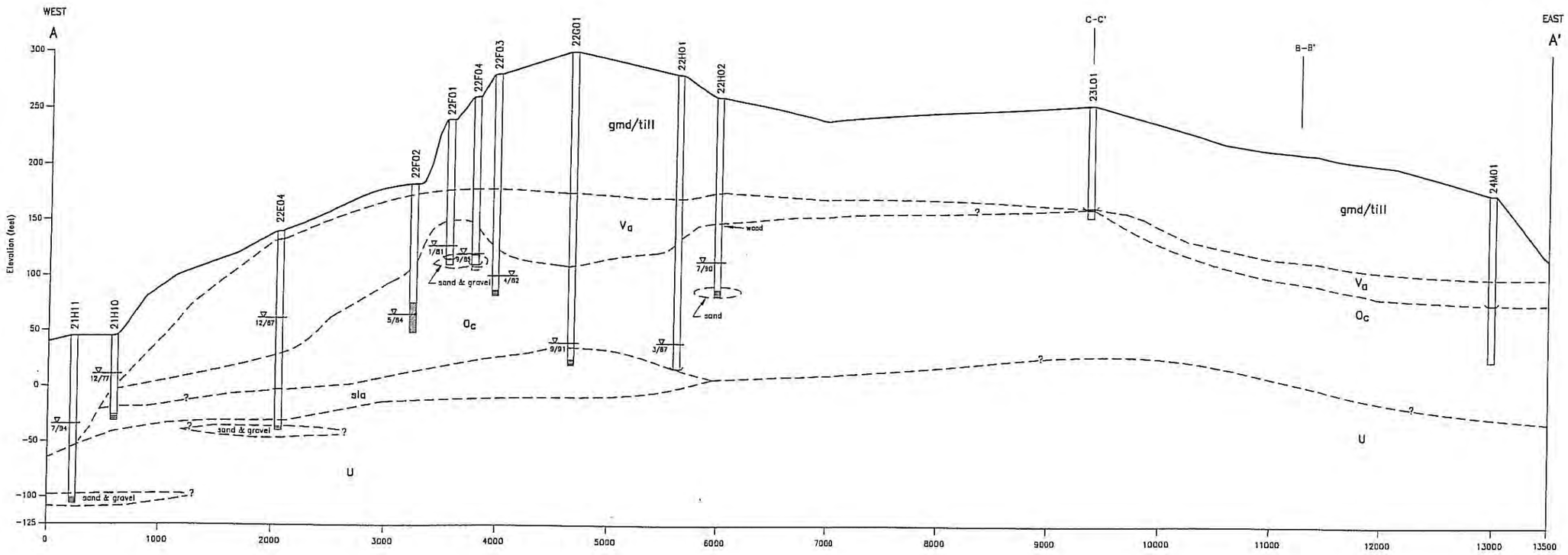
CADD SYSTEM
AutoCAD Rel. 15.05
GRAND COULEE, WA.

CADD FILENAME
LOC-SECTIONS.DWG
JUNE 20, 2000

FIGURE 8

DATE PLOTTED
APRIL 19, 2001 14:00
PLOTTED BY
RKROHN

SECTION A–A'



DOMINANT LITHOLOGY AND CHARACTERISTICS OF HYDROGEOLOGIC UNITS

(based on driller's descriptions in study area well logs)

FRASER GLACIATION

gmd/till — Includes glaciomarine drift, glaciomarine outwash and Vashon till, undivided. Described on the well logs as clayey or silty gravel, sandy clay and clay with sand and gravel. Included in this unit are layers of relatively clean sand and gravel. The till is often described on well logs as hardpan, compact, or tight. Generally a semi–confining to confining unit but locally contains relatively clean sand and gravel lenses of limited hydrologic production potential. Approximately 3% of the study area wells are completed in this unit.

V_a — Vashon advance outwash. Described on the well logs as sand and gravel with interbeds and thin layers of silty or clayey sand and gravel. Approximately 30% of the wells in the study area are completed in this aquifer. The aquifer is under water table conditions in most of the study area.

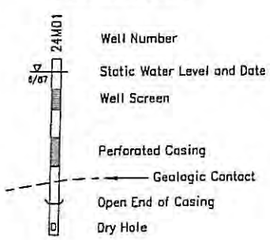
PRE–FRASER GLACIAL AND NONGLACIAL DEPOSITS

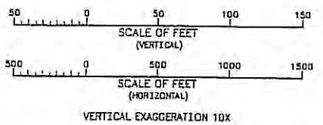
O_c — Olympia non–glacial sediments. Includes interglacial clay with thin layers of silty or clayey sand and clayey gravel. Commonly contains wood and peat. Approximately 9% of the study area wells are completed within this unit.

sla — "Sea–level" aquifer. Predominately composed of sand and gravel and occurs near sea–level elevation. Aquifer is confined by Olympia clay above and by fine–grained undifferentiated deposits below. Aerial extent of the aquifer is not fully defined due to limited subsurface data. Approximately 25% of the study area wells are completed in this aquifer.

U — Undifferentiated glacial and non–glacial deposits. Includes layers of water–bearing sand and gravel separated by layers of silt and clay. These thin confined aquifers range in water production potential depending on the local hydraulic characteristics and aerial extent. Approximately 29% of the wells in the study area are completed in these water–bearing zones. The extent and interconnectedness of these zones are unknown due to limited subsurface data.

EXPLANATION





ALWAYS THINK SAFETY

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

SWINOMISH INDIAN RESERVATION
HYDROGEOLOGIC CROSS SECTIONS
SECTION A–A'

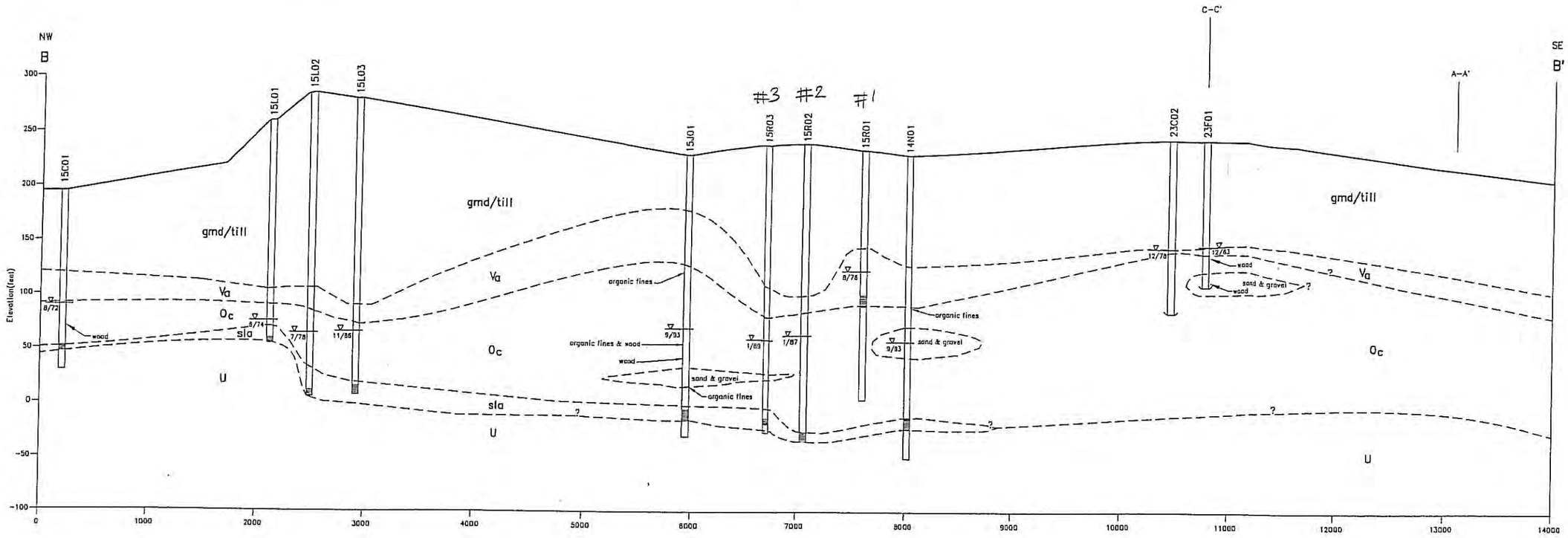
GEOLOGY K. DIDRICKSEN TECH. APPR.
DRAWN P. K. HELSEN SUBMITTED
CHECKED APPROVED

CADD SYSTEM: AutoCAD Rel. 15.05
CADD FILENAME: SECTION A–A'.DWG
GRAND COULEE, WASHINGTON — FEBRUARY 13, 2008

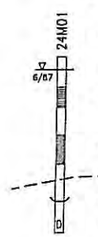
FIGURE 9

DATE APRIL 19, 2001 13:26
PLOTTED BY RKROHN

SECTION B–B'



EXPLANATION



Well Number

Static Water Level and Date Measured

Well Screen

Perforated Casing

Geologic Contact

Open End of Casing

Dry Hole

SCALE OF FEET (VERTICAL)

SCALE OF FEET (HORIZONTAL)

VERTICAL EXAGGERATION 10X

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

SWINOMISH INDIAN RESERVATION

HYDROGEOLOGIC CROSS SECTIONS
SECTION B–B'

GEOLOGY K. DIDRICKSEN — TECH. APPR.

DRAWN P. K. NELSEN — SUBMITTED

CHECKED — APPROVED

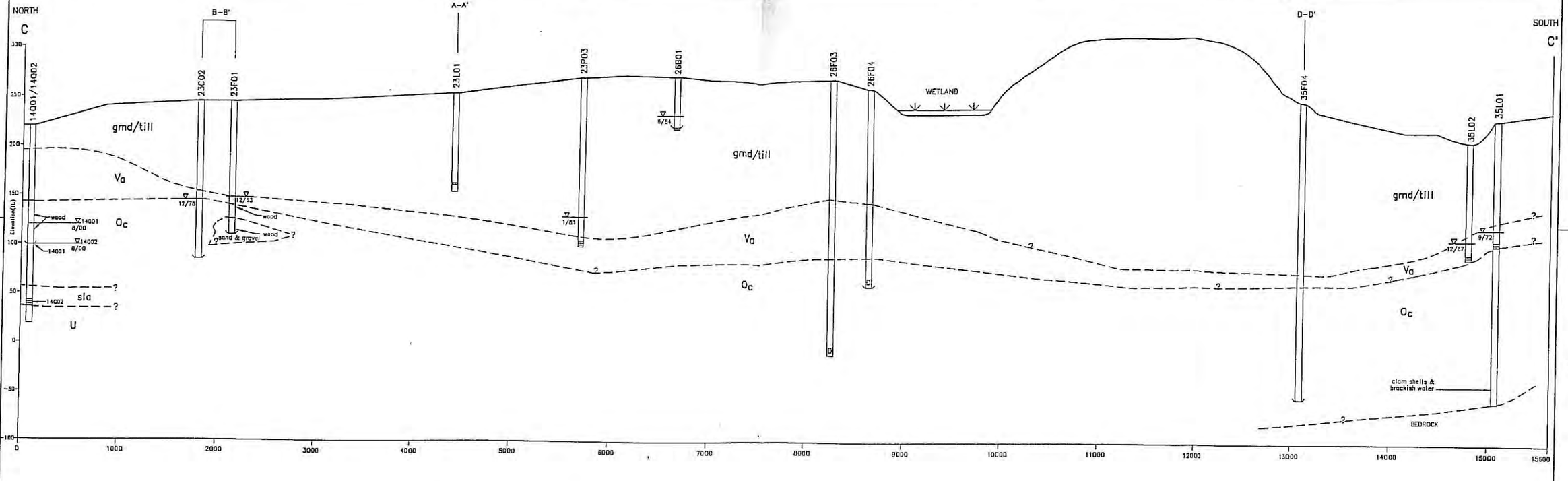
CADD SYSTEM: AutoCAD Rel. 15.05, GRAND COULEE, WASHINGTON

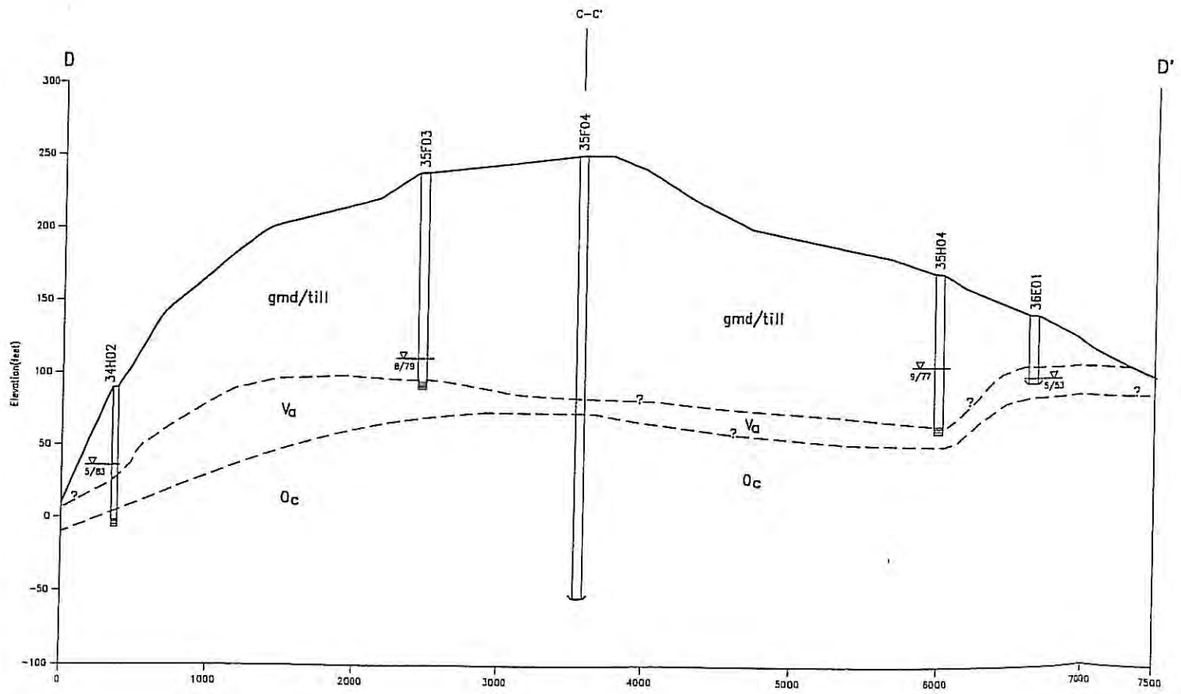
CADD FILENAME: SECTION B-B'.DWG, FEBRUARY 12, 2002

FIGURE 10

DATE PLOTTED: APR 19, 2002 13:26
PLOTTED BY: RKROHN

SECTION C–C'





EXPLANATION

Well Number

Static Water Level and Date Measured

Well Screen

Perforated Casing

Geologic Contact

Open End of Casing

Dry Hole

SCALE OF FEET (VERTICAL)

SCALE OF FEET (HORIZONTAL)

VERTICAL EXAGGERATION 10X

ALWAYS THINK SAFETY

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

SWINOMISH INDIAN RESERVATION

HYDROGEOLOGIC CROSS SECTIONS
SECTIONS C–C' & D–D''

GEOLOGY K. DIDRICKSEN TECH. APPR.
DRAWN P. K. NELSEN SUBMITTED
CHECKED APPROVED
CADD SYSTEM AutoCAD Rel. 15.05 GRAND COULEE, WASHINGTON
CADD FILENAME SECTION C-C.DWG FEBRUARY 15, 2000

FIGURE 11

DATE PLOTTED APRIL 19, 2001 13:27
PLOTTED BY RHOGAN

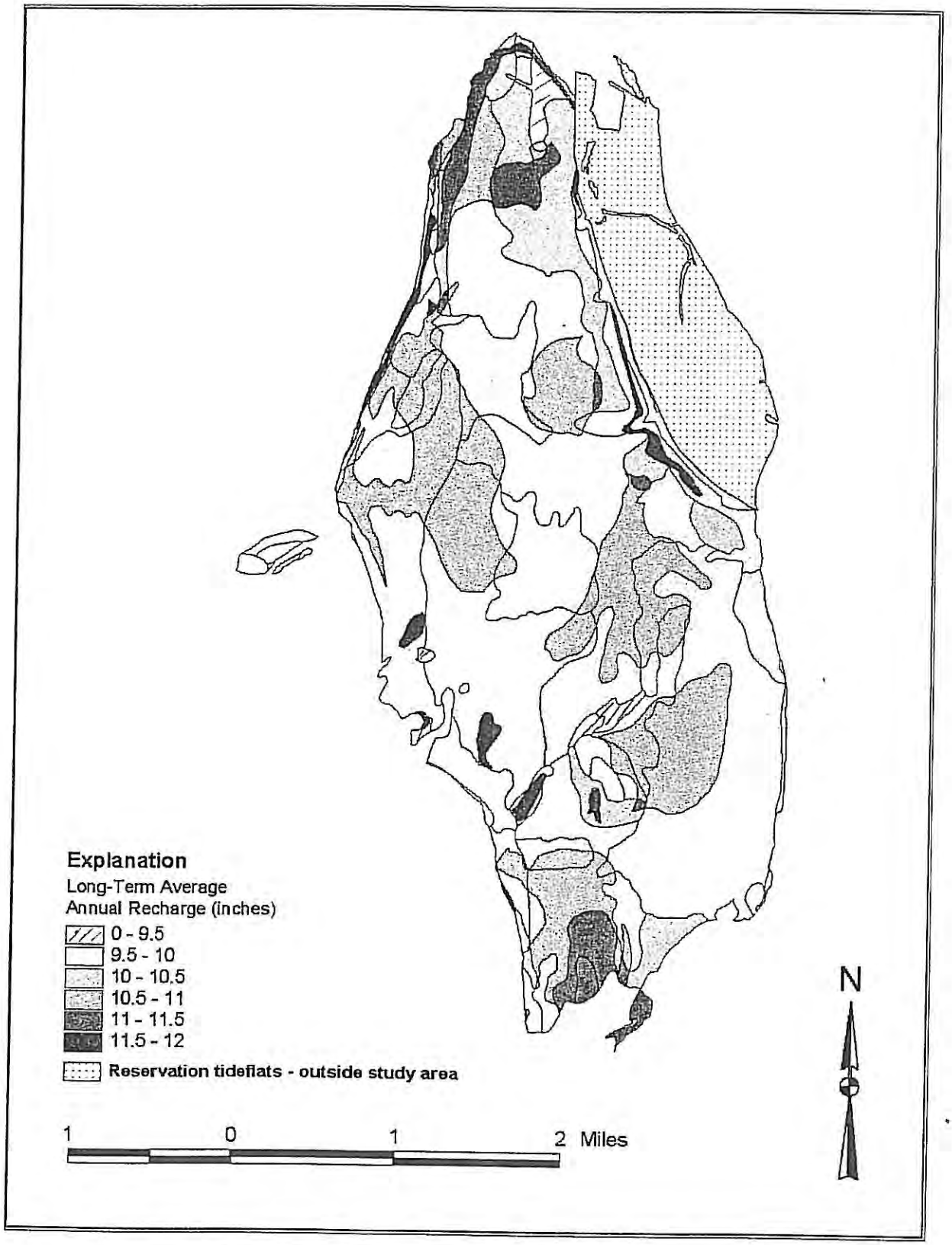


Figure 25. Distribution of Long-Term Average Recharge from Precipitation

APPENDIX B

WELL BORING AND COMPLETION LOGS OF SUA WELLS

Second Copy — Owner's Copy
Third Copy — Driller's Copy

Well #2/

WATER WELL REPORT

STATE OF WASHINGTON 34215R01 Permit No.

(1) OWNER: Name U S Geological Survey Address 1305 Tacoma Ave S Tacoma Wa. 98402

(2) LOCATION OF WELL: County Skagit SE ¼ SE ¼ Sec 15 T 34 N. R 2E W M

Bearing and distance from section or subdivision corner 200' N And 48°W of SE Cornet of Sect 15

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) #2
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 230 ft. Depth of completed well 143 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6" Diam. from 0 ft. to 133 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☐ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☒ No ☐
Manufacturer's Name Houston
Type Model No
Diam. 6 Slot size 30 from 133 ft. to 143 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18' ft.
Material used in seal. Bentinite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata.
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level. ft.
Static level 113' ft. below top of well Date 8-4-76
Artesian pressure lbs. per square inch Date.
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water lowered below static level Driller &
Was a pump test made? Yes ☒ No ☐ If yes, by whom? USGS
Yield 52 gal./min with 5.24 ft drawdown after 24 hrs

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
0	116.16	1hr.	111.39	10 hr.	111.10
30SEC	112.47	3hr.	111.28	13½hr.	111.06
30min	111.47	6hr.	111.23	22 hr.	110.98

Date of test
Bailer test 24 gal./min. with 6" ft drawdown after hrs.
8/17 & 18/76 Driller (Date)
Temperature of water 9.6C Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation

MATERIAL	FROM	TO
Sand & Gravel	0	10
Brown Clay & Gravel	10	12
Dirty Sand & Gravel	12	75
Brown Sand & Clay	75	81
Dirty Brown Sand	81	84
Sand & Gravel	84	116
Water Bearing Sand & Gravel	116	118
Medium Sand	118	126
Coarse Sand & Gravel	126	141
Blue Clay	141	230

Work started 7-26- 1976 Completed 8-4- 1976

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

NAME DAHLMAN PUMP & DRILLING INC.
(Person, firm, or corporation) (Type or print)

Address Burlington Wa. 98233

[Signed] R C Johnson
(Well Driller)

License No. 223-02-7387 Date 8-23-76 19

(USE ADDITIONAL SHEETS IF NECESSARY)

B 1 No 7336—OS—(Rev 4-71).

34215R02 Well #2 34/02/15R

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

Well #2

WATER WELL REPORT

STATE OF WASHINGTON

Application No

Permit No

(1) OWNER: Name Swinomish Tribe Address 950 Moorage Way - La Conner

(2) LOCATION OF WELL: County Skagit -- SE ¼ SE ¼ Sec 15 T 34 N., R 2 E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic [X] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ]

(4) TYPE OF WORK: Owner's number of well (if more than one) 2
New well [X] Method: Dug [ ] Bored [ ]
Deepened [ ] Cable [X] Driven [ ]
Reconditioned [ ] Rotary [ ] Jetted [ ]

(5) DIMENSIONS: Diameter of well 8 inches.
Drilled 274 ft. Depth of completed well 273'-3" ft.

(6) CONSTRUCTION DETAILS:

Casing installed: ..." Diam. from .. ft. to .. ft.
Threaded [ ] ..." Diam. from .. ft. to .. ft.
Welded [X] ..." Diam. from .. ft. to .. ft.

Perforations: Yes [ ] No [X]
Type of perforator used
SIZE of perforations .. in. by .. in.
.. perforations from .. ft. to .. ft.
.. perforations from .. ft. to .. ft.
.. perforations from .. ft. to .. ft.

Screens: Yes [X] No [ ]
Manufacturer's Name Johnson
Type Stainless Model No
Diam. 12 Slot size 40 from 266' ft. to 273-3" ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes [ ] No [X] Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes [X] No [ ] To what depth? 21 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes [ ] No [ ]
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name Flint & Wallin
Type: Submersible H.P. 5

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 176'-6" ft. below top of well Date 1-23-87
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [X] No [ ] If yes, by whom? CDC
Yield: 125 gal./min. with 5'-9½" ft. drawdown after 24 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
12:16	179'-2"	12:45	178'-4½"	14:45	177-9"
12:18	179'-1"	13:00	178'-3¼"	16:45	177-6"
12:30	178-7¾"	13:15	178'-1½"	1715	177'-4"

Date of test 1-22-87
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes [X] No [ ]

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Sandy loam Brown	0	4
Clay & sand (compact)	4	26
Clay, gravel, sand	26	84
Clay & sand Grey	84	90
Clay & sand (compact) Brown	90	112
Clay, gravel & sand	112	128
Gravel & sand Grey	128	129
Clay Dk. brown	129	138
Gravel & sand (grey) with clay (brown)	138	154
Clay & gravel Grey	154	169
Clay grey-brown	169	251
Sand & silt Brown (Approx. 100' in case)	251	252
Clay & gravel (very compact) Brown	252	262
Gravel & sand (water)	262	272
Clay Blue	272	

1/16/87

RECEIVED
FEB 9 1987
DEPARTMENT OF ECOLOGY

Work started FEB-9 1987 Completed 1-22 19 87

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Carpenter Drilling Co.
(Person, firm, or corporation) (Type or print)

Address 2032 S. Bay Rd. - Olympia

[Signed] Jerry R. Carpenter
(Well Driller)

License No. 067 Date 1-25 19 87

34215R03 34-6. - 11E

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

Well #3

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 023232

Water Right Permit No. _____

(1) OWNER: Name Indian Health Service Address 2201 6th Ave. Rm.300 Seattle

(2) LOCATION OF WELL: County Skagit SE ¼ NW ¼ Sec 23 T. 34 N. R. 2 W

(2a) STREET ADDDRESS OF WELL (or nearest address) Reservation Rd. Swinomish Community Well

(3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☒ ☐ Irrigation ☐ Test Well ☐ Other ☐ ☐ DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) #3

Abandoned ☐ New well ☒ Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 8" inches. Drilled 266 feet. Depth of completed well 260 ft.

(6) CONSTRUCTION DETAILS:

Casing Installed: 8" Diam. from 0 ft. to 252 ft. 248
Welded ☒ 7" Diam. from 248 ft. to 253 ft.
Liner installed ☐ Threaded ☐ _____ Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒

Type of perforator used _____

SIZE of perforations _____ in. by _____ in.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐

Manufacturer's Name Johnson

Type S.S. Model No. _____

Diam. 7 5/8 Slot size .050 from 253 ft. to 258 ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel _____

Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 18' ft.

Material used in seal Bentonite

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 180' ft. below top of well Date 1-9-88

Artesian pressure 177' lbs. per square inch Date 1-12-88

Static with Pump — Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom? Dahlman Dr. Hr

Yield: 154 gal./min. with 49'2" ft. drawdown after 3 hrs.

" 151 " 51'1" " 1 "

" 151 " 51'4" " 12 "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
3 Min.	178'3"	1 Hr.	177'9"		
20 Min.	178'5"	2 Hr.	177'8"		
1 Hr.	177'11"				

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest 100+ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTIO

Formation: Describe by color, character, size of material and structure, and sho thickness of aquifers and the kind and nature of the material in each stratum penetrate with at least one entry for each change of information.

MATERIAL		FROM	TO
Brown Clay	26	0	26
Brown Clay, Gravel	56	26	82
Sandy Brown Clay	8	82	90
Blue Clay	14	90	104
Brown Clay, Gravel	26	104	130
Sand, Gravel, Water	28	130	158
6 GPM @ 130'			
30 GPM @ 140'			
30 GPM @ 150'			
Blue Clay	54	158	212
Sand, Gravel, Water	5	212	217
214' 20 GPM			
Blue Clay	23	217	240
Gravel, Water	20	240	260
Blue Clay, Gravel	6	260	266
7" 5' extention above screen			
3' below screen			

RECEIVED
JAN 20 1989
DEPARTMENT OF ECOLOGY
NORTHWEST REGION

Work started 1-3-89, 19. Completed 1-9-89, 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME DAHLMAN PUMP & WELL DRILLING, INC. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address Box 422, Burlington, WA. 98233

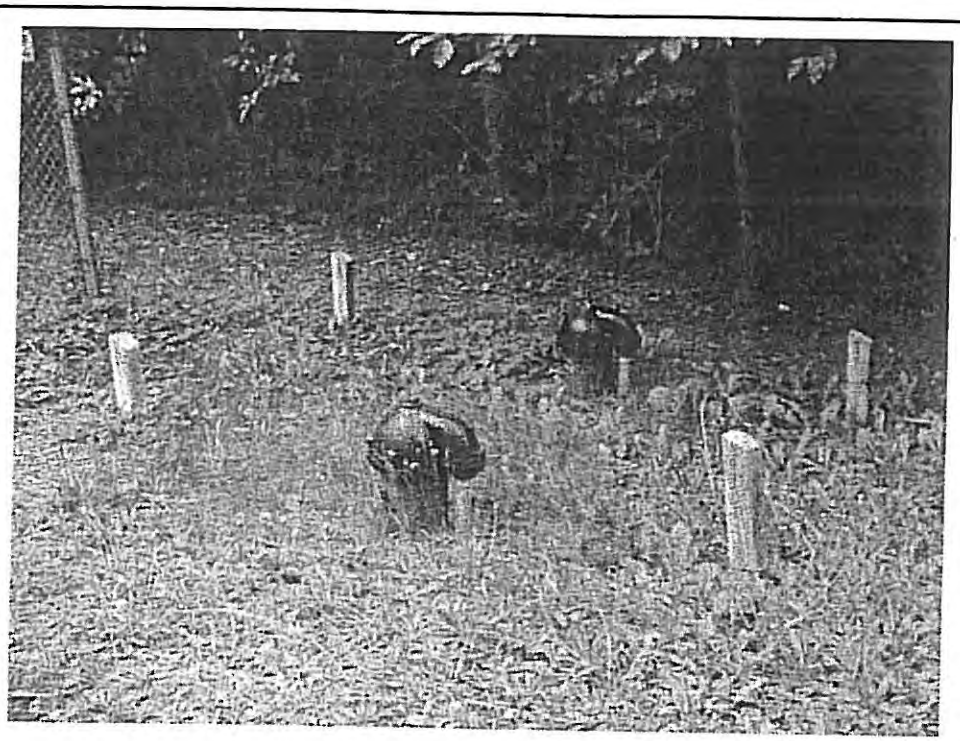
(Signed) Ed Richter (WELL DRILLER) License No. 0623

Contractor's Registration No. DAHLMPW123 Date 1-10-89, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

APPENDIX C

PHOTOGRAPHS OF SUA WELLS



Well #2 and Well #3

Treatment Plant

Annual Report 2008

2008 Water Quality Report PWS 10530032

A Consumer Confidence Report

The Swinomish Tribal Community

The Swinomish Tribal Water System

Water Quality

Our goal is to always supply safe water to our customers. We are pleased to report on our efforts to meet this goal. This report contains detailed information about water quality and water testing completed between January 1, 2008 and December 31, 2008. In summary, the water we supplied met all Federal quality standards. We continue to monitor the water monthly for bacteria and conduct special studies for lead and copper contamination. The Utility Department and the Swinomish Tribal Community remain committed to ensuring the highest quality of drinking water.

Our Water System

The Swinomish Tribal Community buys water from the city of Anacortes. We then pipe the water throughout the Reservation to serve the Village and other Tribal neighborhoods. We also sell water to commercial customers and other neighborhood users. We have two backup emergency wells on Reservation Road. To distribute the water, we maintain storage tanks, pumps, and miles of pipeline.

Want To Know More?

If you have any questions about this report or concerning your water utility, please contact John Petrich, Utility & Housing Director at 466-7223.

We want our customers to be informed about their water utility. If you want to learn more, please attend any of the regularly scheduled meetings of the Utility Authority. The meeting announcements are posted at most tribal buildings.

The Skagit River is our source of water.

- For additional water quality information
- Environmental Protection Agency – Safe Drinking Water Hotline 800-426-4791
- EPA Web site www.epa.gov/safewater
- American Water Works Association Web site www.awwa.org
- *City of Anacortes Water Department 428-1598*
- *Swinomish Tribal Utilities: 466-7223*

Contents:

Water Quality Data	2
A Monitoring Waiver	3
Concerns About Lead	3
The Taste of Chlorine	3
Fluoride in Water	3
Special Health Concerns	4
Our Goal	4

About Water Quality

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radio-active material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water before we treat it include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic waste water discharges, oil and gas production, mining or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture and residential uses.

Radioactive contaminants, which are naturally occurring.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum

2008 Water Quality Data

The table below shows the results of our water quality analyses. Every regulated contaminant that we detected in the water, even the most minute traces, is listed here. The table contains the name of each contaminant, the highest level allowed by the regulations (MCL), the ideal goals for public health (MCLG), the amount detected, and the usual sources of such contamination.

Lead & Copper	MCL	MCLG	Range Detected	Range of Detection	Number of Sites above Action Level	Typical Source of Contaminant
Copper (mg/l)	1.3	1.3	0.096 average	0.018-0.178	0	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (µg/l)	15	.015	0.002	0.002-0.003	0	Corrosion of household plumbing systems, erosion of natural deposits.

This information below was provided by our supplier, The City of Anacortes. The data from samples collected in 2008:

Contaminants	MCL	MCLG	Level Detected	Range of Detection	Violation	Typical Source of Contamination
Total Trihalomethanes (ppb)	80	0	27.24 average	14.4-44.1	none	By product of drinking water chlorination

Table Definitions:

Maximum Contaminant Level: The "Maximum Allowed" (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal: The "Goal" (MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Parts per Million (ppm) or
Milligrams per liter (mg/l): Equivalent ratios of the contaminant in the water. By comparison 1 ppm would be like 1 penny in $10,000.

Parts per billion (ppb) or
Micrograms per liter (µg/l): Equivalent ratios of the contaminant in the water. By comparison 1 ppb would be like 1 penny in $10,000,000.
AL: Action Level, the concentrations of a contaminant,which if exceeded,triggers treatment or other requirements that a system must follow.

What does the data mean?

The table shows that while some contaminants were detected, The levels were well below the established standards for drinking water. We are in full compliance with the established regulatory standards for public water supply operation. Our water quality reports are available for inspection at the Utility Office. We also have the current consumer confidence report from our supplier on file. Please contact our office if you would like to review this information.

Our Monitoring Program

Every three years we tested our water for lead and copper, our supplier also tests over 80 contaminants, including solvents, pesticides, heavy metals, and other inorganic chemicals. We collect and test samples every month for bacteria. .Chemicals added to the water for treatment are tested daily.

A Monitoring Waiver

The Swinomish Tribal Water System received a monitoring waiver from the EPA for testing chemicals in our backup well supply. The EPA issued this waiver because our system has shown to be in past compliance and the wells are only used infrequently during emergencies. The waiver saves valuable financial resources from our budget. The EPA routinely examines the waiver to insure that public health is not compromised. If the situation changes and the EPA determines that our water may be vulnerable to contamination, or the well source use is increased, we will then resume water quality monitoring for our back-up water supply wells.

According to EPA:

All drinking water, including bottled water, may contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791

Should I be concerned about lead?

If present,elevated levels of lead can cause serious health problems,especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Swinomish Utility Authority is responsible for providing high quality drinking water, but connot control the variety of materials used in plumbing-components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

(fromNational Primary Drinking Water Regulations Part 141.154, in the section called " Required additional health information")

Why does the water sometimes taste like chlorine?

Our water treatment process includes adding chlorine to kill bacteria. The drinking water regulations require that we keep a chlorine residual throughout our water distribution system. This insures that disinfection is accomplished throughout the system. Many factors influence the level of chlorine in the water. These include; system maintenance, line flushing, fire hydrant maintenance, water temperature, and the quantity of water flowing through the pipes. Any of these may cause you to notice the smell or taste of chlorine. Water leaving our treatment facility has a level of around 0.5 parts per million. We attempt to keep just a trace amount of chlorine residual, at the ends of the distribution system, to provide bacteria contamination protection for all customers

What about fluoride and water?

Fluoride is a naturally occurring chemical often found in water sources. Public health research has found that people who drink water containing optimal levels of fluoride have better dental health than consumers of fluoride deficient water. We adjust the fluoride concentration in our water to optimal levels. We test the water daily for fluoride concentration and use our equipment to maintain the level at about 1.0 part per million throughout the distribution system. Our customers receive the benefit of consuming water containing the optimum level of fluoride.

"Our customers receive the benefit of consuming water containing the optimum level of fluoride."

The Swinomish Tribal Community

Utility and Housing Authorities
Swinomish Tribal Community
P.O. Box 340
LaConner, WA 98257

Phone: 360-466-7223
Fax: 360-466-7219

"We are committed to always supply safe water to our customers".

Our Goal Is To Provide Safe Water!

The Swinomish Tribal Community manages the water utility to provide valuable water service to community members and other customers. The tribal utility department will continue to maintain and monitor the water supply so that our goal, *"to always supply safe water to our customers"* is achieved. Please contact us if you have questions or if you would like more detailed informa-

Special Health Concerns:

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the *Safe Drinking Water Hotline (800-426-4791).*

SWINOMISH UTILITY AUTHORITY
WATER AND SEWER UTILITY

CONTINGENCY PLAN

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CONTINGENCY PLAN

DECLARATION

PURPOSE -WHY

The Situation

Swinomish Utility Authority recognizes that there are several conditions and /or situations which occur when they can be classified as an emergency. Upon the completion of a vulnerability assessment of the water and wastewater utility facilities, the SUA has determined that there are natural disasters and emergencies which can cause disruption of water and wastewater service to our customers or otherwise pose a direct or indirect health hazard.

The Response

To provide for the public health and to meet our customers expectation for service , Swinomish Utility Authority, SUA,has developed this Contingency Plan.

AUTHORITY

Who

This program was developed under the authorization of the Manager of the SUA and is in compliance with the following federal, state and city regulations:

REGULATIONS

Federal

OSHA 29 CRF1910.38

Local

This program is authorized by the Manager of the of SUA

SCOPE

What are Emergencies

In this plan, an emergencys is defined as follows: Emergencies are conditions that occur which threaten public health by decreasing the possibility that the water system will be able to provide adequate and reliable water to all of its customer or the wastewater system will fail in such a way as to increase the customers risk of exposure to disease.

What are Disasters

In this plan, a disaster is an event, natural or man-made, which is concentrated in time and space and which causes community damage.

Categories

For this plan all emergencies and disasters have been placed into one of two categories;

Routine emergencies

Non-routine emergencies

Routine Emergencies

Routine emergencies are those events which occur routinely in most water and sewer systems. They include:

Line breaks

Weather related problems such as: severe wind storm, flooding, ice storm, snow storm, drought, etc.

Violation of MCL or AL

Power outage

Building fire

Landslide (mass soil movement)

Chlorine spill

Pump failure

Sewage spill or broken sewage line

Non-routine Emergencies

In this plan, non-routine emergencies include disasters. These incidents would include:

Earthquake

Contamination of source

Contamination in distribution system

Volcanic eruption

Tornado

Hurricane

Tsunami

Area-wide flood

Chemical spill such as: chlorine, alum, soda ash, etc.

Not in Plan

Not covered in this plan are those incidents t which are considered too unlikely to occur to warrant the development of a plan, or represent destruction of such catastrophic proportions as to make planning impractical. These include:

Riot or civil disorder

Nuclear warfare

Bomb blast

Sabotage

Basic Premise

The basic approach used for developing this contingency plan is :

1. Develop an emergency response process that allows the utility to respond to any emergency.

2. Develop specific procedures for highest probability and highest frequency incidents. In the development of

these specific procedures, those incidents that would cause the most severe damage to the Utility are emphasized.

AFFECTED FACILITIES

This plan is designed for the SUA Water and Sewer Utility.

OBJECTIVES

The basic objectives of this plan are:

Provide a system for effectively responding to routine and non-routine emergencies.

Provide step-by-step procedures for responding to those routine and non-routine emergencies which have a high probability of occurrence and which will cause major disruption of service or will represent a health risk to employees and/or customers..

PLAN ELEMENTS

This Contingency Plan is composed of the following elements:

a written plan,

description of design considerations for an emergency command center,

a record keeping system,

written procedures for responding to the following incidents:

- Raw sewage or sewage sludge spill
- Broken water main
- Broken sewer line
- Chlorine spill
- Failure of a lift station
- Loss of source
- Loss of the reservoir
- Loss of Sewer line across Swinomish Channel
- Biological contamination

POLICY

General Policy statement

It is the policy of the SUA that the Utility will take all necessary and reasonable actions to prevent the disruption of service as a result of routine or non-routine emergencies. In addition, the Utility will take all appropriate action necessary to prevent a risk to health as a consequence of an emergency associated with the facilities of the Utility. Furthermore, the Utility will respond to emergencies utilizing the incident command system.

Command Center

The Utility will develop an incident command center designed for the response to routine and non-routine emergencies. This incident command center will be equipped with communication equipment, maps and other appropriate information to allow decisions to be made concerning responses to emergencies that affect the Utility.

Development of Procedures

The Utility will perform a vulnerability analysis of the Utility facilities and from this analysis develop specific response plans to allow the Utility to effectively respond to those incidents of the highest probability that could cause the most severe disruption of service or pose a health risk to workers and/or customers.

RESPONSIBILITIES

SUA Manager

The Manager is responsible for the following:

Authorizing the development of the Contingency Plan

Review and approval of the Contingency Plan

Budgeting and authorizing financial resources needed for the development and implementation of this program.

Maintenance of the record keeping system.

Conducting the random and annual evaluation and update of this program

Utility Supervisor

The Utility Supervisor is responsible for the following:

Following the procedures of this plan.

Maintenance of documentation required by this plan.

Inventory and maintenance of the critical spare parts required by this plan.

PROCEDURES

COMMAND CENTER

Resources

The command center will be established in the SUA office. The command center will be contain the following items:

Copies of other emergency plans that include the Utility .

Addresses and phone numbers of key personnel, suppliers, consultants and regulatory agencies.

Maps of system, including Intertie and wells

Equipment and materials inventory listing.

Communication equipment.

This manual.

Information

When an incident occurs, all management personnel, council members, members of the press and any citizen who wishes to obtain information will obtain that information from the command center.

Press Releases

Press releases will be provided by the Utility Manager or in the absence of the manager the Tribal Chairman or individual acting in the capacity of theTribal Chairman. No other tribal employee or member of the council is authorized to speak to a representative of the press in an official capacity.

Report to Center

When an incident occurs all personnel, except as directed by the incident commander, will report to the command center and not to the incident site.

Command

The incident commander is in charge of all decisions associated with the incident. The incident commander will operate from the command center. The incident commander is the Utility Manager or in the absence of the Utility Manager the Tribal Chairman,or individual acting in the capacity of theTribal Chairman. The Utility Manager or Tribal Chairman may delegate the incident commander position to the Police Chief or any other qualified individual.

On Scene Commander

At each incident there will be a On Scene Commander. The designated On Scene Commander is the Utility Manager or in the absence of the Utility Manager someone appointed by the Tribal Chairman.

Authority

The On Scene Commander is given all necessary authority to make on-site decisions. The On Scene Commander will coordinate with the Incident Commander so that the Incident Commander is appraised of all decisions and on-site conditions in a timely manner.

Communication

Constant radio communication shall be available to the two commanders.

DOCUMENTATION

At the Command Center

The following documentation shall be maintained at the commanded center.

Call out listing

Key Phone numbers

Listing of critical spare parts used for emergencies and the location of the parts

Listing of special equipment for emergencies and the location of this equipment

Priority Customer Listing

Master copy of the Water Shut-off Notice

Master copy of the Customer Complaint Form

Master copy of the Public notice - Fecal Coliform violation

Master copy of the Public notice - Coliform violation

Master copy of the Damage report

Copies of all past damage reports

SPECIFIC PROCEDURES

From Analysis

This section is composed of the following specific procedures. These procedures resulted from a vulnerability analysis of the water and wastewater system and are considered to the most common types of emergencies that would occur in the Utility.

- Raw sewage or sewage sludge spill
- Broken water main
- Broken sewer line
- Sodium hypochlorite spill
- Failure of a lift station
- Loss of source
- Loss of the reservoir
- Loss of the sewer line across Swinomish Channel
- Biological contaminations

RAW SEWAGE OR SEWAGE SLUDGE SPILL

The Hazard

The hazards associated with the spillage of raw sewage or sewage sludge from the septic tank are waterborne and blood borne pathogens.

Frequency - Occurrence

This type of incident could happen under any of the following conditions:

Broken gravity lines

Broken force main

Repair to lift station pumps

High I & I which causes manholes to overflow

Accidental spill while pumping the septic tank

Vehicle accident to the sludge pumper while hauling septic tank sludge

Secondary Hazards

There other obvious hazards associated with excavations that should be considered but will not be discussed here.

Other Programs

Support information on safe handling of sewage and disinfection of mechanical components is provided in the Exposure Control Program. The handling of lime and the use of associated personal protective equipment are described in the Hazard Communication and Respiratory Protection Program. In addition, the safety precautions found in the Traffic Control Program and the Competent Person Program should be followed. Summary information on these items is contained in the Employee Safety Handbook.

Personal Protective Equipment

This procedure requires the following personal protective equipment:

Water proof gloves

Chemical goggles

Respiratory protection when handling powdered lime

Rubber boots and rain clothing

Safety Equipment

The following additional safety equipment may be required:

Traffic control devices

GENERAL SAFETY PRECAUTIONS

Calcium Hypo chlorite

When mixing calcium hypo chlorite in water, the container should be filled about one-half full of water, then mix hypo chlorite with the water. **WARNING: Never pour the water directly onto dry calcium hypochlorite. It could explode and burn.**

Chlorine and Ammonia

Under no circumstances should a chlorine solution (calcium or sodium) be mixed with ammonia. The result can be a violent reaction. In any case, ammonia chloride, a deadly gas, will be produced.

Hydrated Lime

The preferred lime for the treatment of sludge is Ca $(OH)_2$, calcium hydroxide, also called hydrated lime. This material is a very strong base and will burn the skin or mucous membranes of the nose and mouth. When added to water, heat is generated. If the quantity of lime is too high for the volume of water, an explosion can occur.

Raw Sewage & Lime

If dry lime is mixed directly with raw sewage containing urine, an extremely violent explosion can occur. This is a result of the reaction between the lime and the ammonia, which is a natural component of line.

PROCEDURE

Lime or Chlorine

Raw sewage and sewage sludge can be disinfected by using a milk of lime solution or a 5% solution of sodium or calcium hypochlorite. Household bleach is 5% sodium hypochlorite.

Milk of Lime

Milk of lime solution is made by mixing 1 part lime with 4 parts water.

APPLICATION

Notification

If a street is to be placed out of service, the On Scene Commander will notify the Incident Commander, who in turn will notify the police, fire and EMS Coordinator.

1. Set up traffic and pedestrian controls to prevent the material from being tracked out of the spill area.
2. Mix a milk of lime solution to obtain a 5% hypochlorite solution.
3. Using a rake mix the milk of lime or 5% chlorine solution in a 50/50 proportion with the raw sewage or sludge spill. At no time will dry lime be used to disinfect a sewage spill.
4. Allow one-hour contact.
5. If possible, gather the material into the front-end loader, dump truck or other suitable hauling device and transport to the landfill or sludge disposal site.

6. Flush the area with clean water. Contain the water in a trench or storm sewer or divert the water to the collection system.
7. If the wastewater is contained in a trench or storm sewer, apply more disinfectant and allow drying.
8. Install barriers to prevent material from being tracked out of the containment area.
9. Once the material has dried, it should be removed by hand to the landfill or sludge disposal site. Material removed to the landfill should be placed in Biohazard bags prior to disposal.
10. If a street was placed out of service because of this incident, the On Scene Commander will notify the Incident Commander when the street is back in service.
11. The Incident Commander will then notify the police, fire and EMS Coordinator that the street has been returned to service.
12. The On Scene Commander will fill out a Damage Report and file it with the City Manager.

Other Considerations

1. All contaminated clothing, tools and equipment will be transported in biohazard bags.
2. Contaminated parts or clothing identified for disposal will be sent to the landfill in biohazard bags. If possible the articles will be disinfected with a milk of lime or 5% chlorine solution prior to disposal.

BROKEN WATER MAIN

The Hazard

There are two hazards associated with broken water lines. One is the possibility of backsiphonage due to low pressure and the second is the possibility of contamination of the distribution system from contaminants in the ground around the break or from materials used to repair the break.

Secondary Hazards

There are other obvious hazards, those that result form construction. While these need to be considered they will not be discussed here.

Other Programs

Support information on handling chlorine solutions can be found in the Hazard Communication program. In addition, the safety precautions found in the Traffic Control Program and the Competent Person Program should be followed. Summary information on these items is contained in the Employee Safety Handbook.

Personal Protective Equipment

The only special PPE needed for this task is the equipment necessary to handle sodium hypochlorite, which is:

Waterproof gloves

Chemical goggles

Safety Equipment

The following additional safety equipment may be required:

Traffic control devices

Cave-in protection system

Atmospheric hazards control equipment

Water accumulation control equipment

GENERAL SAFETY PRECAUTIONS

Calcium Hypo chlorite

The safety hazards associated with the use of calcium hypochlorite are substantial. As a result it use for disinfection of repair or construction lines is not recommended.

PROCEDURE

Introduction

Because it is not possible to predict the circumstances surrounding a specific break or leak, writing a specific procedure is impossible. Therefore, the following guidelines are to be adapted to the site-specific conditions.

1. Shutdown line - leave some pressure so that the system pressure remains positive. This will reduce the possibility of contamination.

Notification

If a street is to be placed out of service, the On Scene Commander will notify the Incident Commander who in turn will notify the police, fire and EMS Coordinator.

2. Set up traffic control. Traffic control is required for snow machines, three wheelers, and pedestrians as much as it is for automobiles.
3. Excavate where necessary.
4. Install cave-in protection system
5. Test air quality with a gas meter prior to entry into the trench. If the entry conditions are not acceptable then entry must be postponed until air quality can be controlled.
6. Dewater the trench.
7. Disinfect repair parts. Make a 1% solution by placing 1/4 cup of 5% household bleach in 1 gallon of water.
8. Make the repair.
9. Pressurize the water line and test the repair.
10. Remove the cave-in protection equipment.
11. Fill and compact the excavation .
12. Clean-up the work area.
13. Remove traffic control equipment.
14. If a street was placed out of service because of this incident the On Scene Commander will notify the Incident Commander that the street is now back in service.
15. The Incident Commander will then notify the police, fire and EMS Coordinator that the street has been returned to service.
16. The On Scene Commander will fill out a Damage Report and file it with the City Manager.

BROKEN SEWER LINE

The Hazard

The hazards associated with a broken sewer line are the same as those associated with spillage of raw sewage. They are diseases caused by waterborne and blood borne pathogens.

Secondary Hazards

In addition, there other obvious hazards associated with excavations that should be considered and those hazards associated with cutting and handling AC pipe.

Other Programs

Support information on safe handling of sewage and disinfection of sewage contaminated mechanical components is provided in the Exposure Control Program. The handling of lime for disinfection of raw sewage and the use of associated personal protective equipment is described in the Hazard Communication and Respiratory Protection Program. In addition, the safety precautions found in the Traffic Control Program and the Competent Person Program should be followed. Summary information on these items is contained in the Employee Safety Handbook.

Two Procedures

There are two approved procedures for working with AC pipe. One is for cutting the pipe using a handsaw and the second is for installing a repair band on a broken line.

Not Allowed

The use of cut-off saws is forbidden when working with AC pipe.

GENERAL SAFETY PRECAUTIONS

Raw Sewage Spill

For more information on general safety precautions associated with mixing and handling disinfectants that are used with a raw sewage spill, refer to the raw sewage spill procedure in this plan.

AC Pipe

Some of the collection system lines in the SUA are made of AC pipe. Cutting and repairing AC pipe requires special protective equipment and procedures to reduce the possibility of being exposed to asbestos fibers.

HAND SAW CUTTING AC PIPE

Description

Large toothed crosscut hand saws used to manually cut small A/C pipes or to trim larger pipes.

EQUIPMENT REQUIRED

Hand saw

Water source and means of application sufficient to maintain a continuously wetted cutting area.

Traffic control devices

Cave-in protection system

Atmospheric hazards control equipment

Water accumulation control equipment

PROTECTIVE EQUIPMENT INCLUDING

Disposable coveralls or rain gear

Respiratory protection consisting of half-face respirator equipped with HEPA filters or respirator which provides equivalent or better protection.

Rubber boots

Hard hat

MATERIALS & SUPPLIES REQUIRED

Lime or Chlorine

Raw sewage can be disinfected by using a milk of lime solution or a 5% solution of sodium or calcium hypochlorite. Household bleach is 5% sodium hypochlorite.

Milk of Lime

Milk of lime solution is made by mixing 1 part lime with 4 parts water.

Repair Parts

Appropriate and adequate repair parts are also required.

PROCEDURE

Notification

If a street is to be placed out of service, the On Scene Commander will notify the Incident Commander who in turn will notify the police, fire and EMS Coordinator.

1. Set up traffic control. Traffic control is required for snow machines, three wheelers, and pedestrians as much as it is for automobiles.
2. Excavate around the A/C pipe a sufficient distance to assure adequate tool clearance in the area to be cut. Care must be taken to avoid any abrasion to the pipe.
3. Install cave-in protection system
4. Test air quality with a gas meter prior to entry into the trench. If the entry conditions are not acceptable then entry must be postponed until air quality can be controlled.

5. Dewater the trench. Control and disinfect the water removed from the trench with milk of lime or a 5% chlorine solution.
6. Don protective equipment and have sufficient water available before entering the trench to begin cutting operations.
7. Clean and wash with water the surface of the pipe in the area to be cut.
8. Begin applying water to the area being cut and continue until cutting is complete.
9. Saw pipe making sure that water is applied in sufficient quantities to assure that area being cut is continuously wetted and no A/C dust is created.
10. Complete cut, move to new cutting location, and repeat procedure described above. Upon completion of the final cut, thoroughly wash the cutting equipment with clean water to remove all A/C debris. Allow wash water to drain into the bottom of the trench.
11. Install other pipe and fittings as necessary to complete the job, taking care to avoid any abrasions to the A/C pipe.
12. Disinfect any sewage that has spilled into the trench or has been removed by dewatering.
13. When all pipe work is completed, remove disposable coveralls and leave them in the bottom of the trench. Thoroughly wash hands, boots and any small tools with clean water to remove all A/C debris. Allow wash water to drain into the bottom of the trench. Leave all A/C pipe and asbestos-containing materials in the trench unless arrangements have been made for proper disposal at an approved landfill.
14. Exit ditch in such a manner that no A/C debris will contaminate work clothing, boots, tools, etc.
15. Disinfect all tool and equipment that came in contact with raw sewage.
16. Backfill trench.
17. Clean-up area and remove traffic control devices.
18. If a street was placed out of service because of this incident, the On-Scene Commander will notify the Incident Commander that the street is now back in service.
19. The Incident Commander will then notify the police, fire and EMS Coordinator that the street has been returned to service.
20. The On-Scene Commander will fill out a Damage Report and file it with the Utility Manager.

Other Considerations

1. All contaminated clothing, tools and equipment will be transported in biohazard bags.
2. Contaminated parts or clothing identified for disposal will be sent to the landfill in biohazard bags. If possible the articles will be disinfected with a milk of lime or 5% chlorine solution prior to disposal.

REPAIR BAND INSTALLATION ON AC PIPE

Description

Repair bands consist of a pliable gasket material held in place by a metal sleeve tightened over the gasket and is used to repair small A/C pipe leaks.

EQUIPMENT REQUIRED

Repair band and tools necessary for installation

Water source and means of application sufficient to thoroughly clean and wet the area of the pipe to be repaired.

PROTECTIVE EQUIPMENT INCLUDING

Disposable coveralls

Respiratory protection consisting of half-face respirator equipped with HEPA filters or respirator which provides equivalent or better protection.

Rubber boots

Hard hat

PROCEDURE

1. Excavate around the A/C pipe a sufficient distance to assure adequate clearance for installation of the repair band. Care must be taken to avoid any abrasion to the pipe.
2. Don protective equipment and have sufficient water available before entering the trench to begin cutting operations.
3. Clean and wash with water the surface of the pipe in the area where the repair band will be installed.
4. Install the repair band and tighten bolts, keeping the entire exposed area of the pipe wet in the vicinity of the repair band during the operation.
5. Upon completion of repair installation, thoroughly wash all tools with clean water to remove all A/C contamination and remove cleaned tools from the trench. Allow all wash water to drain to the bottom of the trench.
6. Complete any additional work within the trench, taking care to avoid any abrasions to the A/C pipe.
7. When all pipe work is completed, remove disposable coveralls and leave them in the bottom of the trench. Thoroughly wash hands, boots and any additional tools with clean water to remove all A/C debris. Allow wash water to drain into the bottom of the trench. Leave all A/C pipe and asbestos-containing materials in the trench unless arrangements have been made for proper disposal at an approved landfill.

8. Exit ditch in such a manner that no A/C debris will contaminate work clothing, boots, tools, etc.
9. Backfill trench.

PROCEDURE - SPILL AT THE CHLORINE BUILDING

Equipment Requirements

The following equipment must be on site at the chlorine building

Boom for containing a spill

Shovels and tools to contain the spill

Liquid adsorbent pads

Eye wash station

Vinegar

DOT handbook

Copy of MSDS for Sodium Hypo chlorite

Minimize Impact

Every attempt should be made to minimize the impact of a spill on the environment and the workers.

Floor Drain Covered

The floor drain shall be covered at all times, except when the room is being cleaned and the drain is used to remove water from the cleaning. **At no time should a chlorine liquid spill be flushed down the floor drain.**

Application

The following steps are to be used as a guide for control of a chlorine spill.

1. Notify SUA or the Police department of the accident. This will initiate the incident command center.
2. Don personal protective equipment.
3. Use the boom and hand tools to contain the chlorine spill. If the spill is very small then covering with dry sand or fine dirt can contain it.
4. If the spill is 100 pounds (11 gallons) or greater it must be reported to CHLORPREP at 1-800-424-9300 and EPA at 1-800-424-8802. This is done by the On Scene Commander notifying the Incident Commander of the situation. The Incident Commander will report the incident.
5. For small spills that can be contained with sand the sand must be removed from the site by placing it is a clean container and disposing at the landfill.
6. For larger spills, absorbent pads may be used along with fine dirt and/or sand to contain the spill. The pads and contaminated soil must be removed in clean containers and disposed of at the landfill.
7. For spills too large to pickup with soil or adsorbent pads a small pump and clean containers can be used to remove the liquid from the site. The contaminated soil must be removed in a clean container and disposed of at the landfill.

8. The On Scene Commander will fill out a Damage Report and file it with the Utility Manager.

FAILURE OF A LIFT STATION

The Hazard

The primary hazard associated with the failure of one of the sewage lift stations is the spillage of raw sewage. If the Village lift station were to fail, raw sewage would eventually exit from manholes on Front St. If the WS lift station were to fail raw sewage would exit from the holding tank.

Backup of Sewage

A failure of the Village lift station could cause raw sewage to backup into the home on Front St. A failure of WS lift station could cause raw sewage to flow down Ray Paul into the storm drain.

Degree of Hazard

The time between station failure and a raw sewage spill is relative to the flow at the time of failure. The flow at the two lift stations varies dramatically during the year. At high flow times it may not be feasible to control all overflow conditions.

Causes of Failure

The following are conditions that could cause a complete failure of one or both lift stations.

Power outage/Generator failure

Flooding of the station

Personal Protective Equipment

There is no special personal protective equipment necessary for this activity. However, the personnel performing this task are advised to use standard PPE and standard safety precautions.

Safety Equipment

The following additional safety equipment may be required:

Traffic control devices

Special Equipment

In order to by-pass a lift station a submersible pump with a capacity of at least 450 gpm at 50 feet of TDH is required.

PROCEDURE

Notification

When it has been determined that there is a complete failure of the station the first responder will notify the Utility Manager and implement the Incident Command Center.

Caution

It is not possible to predict any and all types of failures. Therefore, this procedure should be seen as a guideline not a set of absolute steps.

Application

With the Center implemented the following procedure should be followed.

Notification

If a street is to be placed out of service, the On Scene Commander will notify the Incident Commander who in turn will notify the police, fire and EMS Coordinator.

LOSS OF THE RESERVOIR

The Hazard

The loss of the finished water storage tank would provide two hazards, loss of fire suppression capabilities and loss of disinfection capabilities.

Cause of the Failure

The reservoir could be off line due to inspection, cleaning and or repainting. In addition the reservoir could be damaged in an earthquake or landslide. Under these last two cases, the chlorine building holding the valving could also be damaged and thus prevent the Utility from implementing this procedure.

Equipment and Materials

If there is not failure of the facility, then the only special materials or equipment necessary will be those to connect in the chlorination system. However, if there is a facilities failure, there will be the need for piping materials to make the various connections. In addition there may be the need for additional chlorine equipment.

Notification - Routine Shutdown

If this is a planned shutdown, then a boil water notice must be sent to all water customers in the monthly bill prior to the shutdown. In addition, this notice should be hand delivered to all B & BÆs, motels, restaurants, the retirement home, the clinic, harbor masters office and the school. Notices must also be posted at SUA and the water services at the harbor.

Notification - Emergency

In an emergency condition, such as an earthquake or other incident that damages the storage tank, the public notification shall take the form of written handouts and notification through the local radio station.

PROCEDURE

Assumption

The following procedure is based on the assumption that there is adequate time to provide public notification. If there is not, use the alternate notification procedure.

Incident Commander

When notified that the Utility must by-pass the storage tank, the Incident Commander shall implement the following procedure.

At Chlorine Station

1. Send out the notification and post notices.
2. Notify the fire department that water volumes will be restricted.
3. Shut off valves .

At Filter Building

4. Observe the flow meter and system pressure. If the meter is not turning there is no flow.

Back in Service

To Place the Reservoir back in Service do the following:

1. Partially open valves .These valves should not be opened more than 1/4 of the way. This will allow the

source to feed the distribution system and at the same time fill the tank.

2. Once the tank is full then: Open valve fully.
3. Note and record the flow meter.

At the Filter Building

4. Note and record the flow meter and system pressure. All conditions should be back to normal.
5. Notify the fire department that conditions are normal.

Public Notification

Boil All Drinking Water

Due to mechanical problems, the Swinomish Utility Authority has taken the storage tank out of service. The removal of this tank from the water system will reduces clorine contact time and thus may represent a health risk. As a result, the Swinomish Utility Authority is advising you to boil all drinking and cooking water for five minutes (5) before use.

There is no known health risk. This is only a precaution but should be taken seriously.

In addition, the lack of a storage tank can cause fluctuations in water pressure.

Please assist us by reducing your water consumption to necessary consumption only.

This condition will exist from _____, ___ 20___ to _____, ___ 20__.

If you have questions please call the Incident Command Center at Swinomish Utility Authority at 466_7223

Thank You

_____
Utility Superintendent

Public Notification Boil All Drinking Water

Due to mechanical problems the Swinomish Utility Authority advises you to boil all water used for drinking or cooking for five minutes.

There is no know health risk. This is a precautionary measure.

For more information contact Swinomish Utility Authority or call 466-7223

LOSS OF WATER LINES

The Hazard

There is one 12-inch PVC pipe from Hwy 20 intertie to Reservation Rd-Sneeoosh Rd "Y". 8" PVC pipe then continues down Reservation Rd to the SUA pump House. From there a 6" PVC line continues down Reservation Rd. to the Indian Rd intersection. It then turns south and continues to the Reservoir.At the intersection of Indian Rd. and Sneeoosh Rd. the lines go south to Fern Ln, east to the Village and west to Westshore and Shorewood.

Vulnerability

All lines are considered vulnerable to earth quakes. The vulnerability assessment identified the following potential failures with these lines.

Loss of a gasket at a joint

Complete failure of one or more sections of line.

Response

The response either of these conditions will require considerable effort. The following procedure is established to provide guidelines for speeding repairs.

Other Procedures

The procedure for repairing broken water mains should be included in this procedures.

Other Programs

In addition, traffic control and excavation safety requirements also apply to this procedure.

Shutdown

The key to making these repairs is to shut down the section of the line that has failed.

PROCEDURE

Notification

When a notification is received that there is a failure or major leak on one of these lines, the Incident Command Center will be activated and the following procedure will be followed.

1. The Incident Commander will direct the Utility Superintendent or other authorized person to evaluate the situation.
2. Based on the evaluation the On Scene Commander may notify the Incident Commander that one of the lines will need to be shut down for repair.
3. The Incident Commander will notify the fire department that there will be a reduced supply of water for fire suppression.
4. The On Scene Commander will install appropriate traffic control.
5. The On Scene Commander will implement the appropriate procedure for shutting down the section of line needed for repair.
6. The main line repair procedure describes in this plan will be utilized.

BACTERIOLOGICAL CONTAMINATION

Hazard

The presence of Coliform in a water system is cause for concern that the system be contaminated. When fecal Coliform is found in a water system it is a confirmation that the system has been contaminated by the fecal material from a warm-blooded animal (not necessary human). When Coliform are present in drinking what there is a high probability that waterborne pathogens are also present.

Violations

This procedure is to be used when there is a notification that the system has violated the Total Coliform Rule. There are two types of violations that cause this procedure to be implemented:

Positive results of a Coliform sample and of the repeat samples.

Positive Fecal Coliform samples

In addition, this procedure could be followed with any suspected biological contamination of the distribution system.

Types of Violations

There are two types of violations:

Tier 1, Acute

Tier 1 Non-Acute.

A Tier 1 Acute violation exist when there is a confirmed fecal positive result found on a Coliform sample. A Non-Acute violation exist when there is a violation of the Coliform MCL but there are not fecal Coliform bacteria present.

Two Step Approach

There are basically two steps to resolving bacteriological contamination problems:

Notify the customers so they are protected, and

Locate the source of the contamination and remove it.

PROCEDURE - NOTIFICATION

Notification

Notification of a violation may be received from the laboratory or from the regional DEC office. In any case when a notice of violation is received the Incident Command Center will be activated.

1. The Incident Commander will notify DEC and the laboratory of the violation and confirm that they are available to help solve the problem.
2. Step two will be different for acute or non-acute health risk.

ACUTE HEALTH RISK

Radio

3. The Incident Commander will send a written notice to the KIKI Public Radio on AM within 72 hours of determining that there is a violation. The station is

located in Anacortes Wa.. Phone 360-293-3141. It is preferred that this notice be sent within 4 hours of the receipt of the information and should be sent by fax.

Handbill **4.** In addition to the radio message, copies of the written notification will be posted at the SUA ,Swinomish Tribal Health clinic, Hope Island fire hall,Swinomish police department . In addition, copies of this handbill will be made available at SUA. This posting will be completed within 72 hours of the determination of the violation. (It is preferable that this posting be done within the same working day that the notice was received)

Mailed with Bill **5.** In addition, the Utility will insert a copy of this handbill with the next regular utility bill.

MCL VIOLATION NOT ACUTE HEALTH RISK

Handbill **1.** When the Utility has determined that it is in violation of a MCL that is not considered to be a health risk, the Incident Commander will prepare a written hand-bill and have it posted at the SUA , clinic, police department . In addition, copies of this handbill will be made available at SUA. This posting will be completed within 72 hours of the determination of the violation.

Mailed with Bill **2.** In addition, the Utility will insert a copy of this handbill with the next regular utility bill.

PROCEDURE FOR CONTAMINATION

Analysis Data

Analyze the bacteriological results and chlorine residuals in an attempt to isolate the area containing the problem.

Isolated Situation

If the contamination appears to be in an isolated area flush that portion of the system and test resulting chlorine residuals.

System Wide

If the contamination appears to be system wide then obtain a raw water bacteriological sample, super chlorinate the raw water (5 mg/L or more) and flush the entire system.

Take bacteriological samples

If negative, the probable cause was a failure of the chlorine system or a heavy contamination at the source.

Chlorine Residual

If the Utility is unable to maintain chlorine residual in any one portion of the system shut down that portion of the system or shut off individual customers. Once the Utility has isolated one portion of the system and is able to maintain chlorine residual the remainder of the system, you have generally isolated the problem.

Re-supply this portion of the system through a fire hydrant connected to the unaffected portion of the system.

Flush this portion of the system

Shut off all services and super chlorinate to 5 mg/L concentration.

Flush the system and take a bacteriological sample. If the sample is negative, turn on the services one at a time until you see a sudden drop in chlorine residual at the customer's faucet. This is most likely your contaminated source.

Problem Solved

Once the problem has been resolved and the Coliform samples are routinely negative the public notice may be removed.

PUBLIC NOTICE

ATTENTION ALL SWINOMISH UTILITY AUTHORITY WATER USERS

TESTS SHOW PRESENCE OF FECAL COLIFORM/ E. COLI BACTERIA

BOIL ALL WATER USED FOR DRINKING OR COOKING

As a public water system, we are required to monitor our drinking water for various contaminants. Samples taken _____ tested positive for fecal coliform or E-coli bacteria. This is a violation of state and federal drinking water standards requiring immediate attention.

State and local health authorities recommend that consumers take the following precautions: (FILL THIS IN BASED ON DIRECTIONS FOR DEC)

General Information

The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the presence of fecal coliforms or E. coli is a serious health concern. Focal coliforms and E. coli are generally not harmful themselves, but their presence in drinking water is serious because they usually are associated with sewage or animal wastes. The presence of these bacteria in drinking water is generally a result of a problem with water treatment or the pipes, which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and associated headaches and fatigue. These symptoms, however, are not just associated with disease causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. EPA has set an enforceable drinking water standard for fecal coliforms and E. coli to reduce the risk of these adverse health effects. Under this standard all drinking water samples must be free of these bacteria. Drinking water which meets this standard is associated with little or none of this risk and should be considered safe.

The bacterial contamination is a result of_____

The following steps are being taken to correct this problem: INSERT DESCRIPTION of STEPS YOU ARE TAKING

Contact the Swinomish Utility Authority at 360-466-7223

For further information contact: John Petrich, Utility Manager, at 360-466-7223.

PUBLIC NOTICE

ATTENTION ALL SWINOMISH UTILITY AUTHORITY WATER USERS

TESTS SHOW HIGH LEVELS OF TOTAL COLIFORM BACTERIA

As a public water system, we are required to monitor our drinking water for various contaminants. Samples taken _____ insert date of test _____ showed that total coliform bacteria were present in more samples than permitted under drinking water stand. This means we are in violation of drinking water standards because we have exceeded the maximum contaminant level for total coliform.

State and local health official recommend that you take the following precautions: DEC will provide the information for this section.

General Information

The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that the presence of total coliforms is a possible health concern. Total coliforms are common in the environment and are generally not harmful themselves. The presence of these bacteria in drinking water, however, generally is a result of a problem with water treatment, or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease.

Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. EPA has set an enforce-able drinking water standard for total coliforms to reduce the risk of these adverse health effect Under this standard, no more than 5.0 percent of the samples collected during a month can contain these bacteria, except that systems collecting fewer than 40 samples/month that have one total coliiorm-positive sample per month are not violating the standard. Drinking water which meets this standard is usually not associated with a health risk from disease causing bacteria and should be considered safe.

The bacterial contamination is a result of____ Insert reason for the violation

The following steps are being taken to correct this problem: Insert information on the steps being taken

For further information contact: John Petrich, Utility Manager, at 360-466-7223

WATER SHUT-OFF PROCEDURE

Conditions

There are two separate conditions where water service may be shut off;

An emergency condition that does not allow preplanning of the shut down, and

Preplanned maintenance or repair conditions.

Each of these will require a different procedure.

Tools, Equipment, Safety

There are no special tools, equipment or safety precautions associated with this action.

EMERGENCY SHUT-OFF PROCEDURE

Notification

When the Utility Superintendent or the person working in this capacity determines that a shut-down is necessary, the individual making this determination shall follow this procedure:

1. The individual making the determination to shut down all or a portion of the system will notify the Utility Manger.
2. The Utility Manger will implement the Command Center procedure.
3. The Incident Commander will notify the fire department and the police department that certain fire hydrants will be out of service and fire suppression capabilities will be reduced.
4. If a street is to blocked the Incident Commander will notify the EMS coordinator of the blockage.
5. Any priority customers in the affected area will be notified by the Incident Commander.
6. Once all notifications have been made the On Scene Commander may shut down service and start repairs.

After Repairs

1. After the repairs have been completed the On Scene Commander will notify the Incident Commander that all repairs are made and service is to be restored.
2. Once service is fully restored the On Scene Commander will notify the Incident Commander.
3. The Incident Commander will notify the fire, police and EMS Coordinator of the return of service and the opening of the street.
4. The On Scene Commander will fill out a Damage Report and fill it with the City Manager.

PRE-PLANNED SHUT-OFF PROCEDURE

Notification

When the Utility Manager or the person working in this capacity determines that a shut-down is necessary the individual making this determination shall follow this procedure:

1. The individual making the determination to shut down all or a portion of the system will notify the Utility Manger at least 48 hours prior to the shut down.
2. The Utility Manger will implement the Command Center procedure.
3. The Utility Manger will coordinate the printing and installation of shut-off notice door hangers. In addition the Utility Manager will place a notice of the shut off at the SUA office.
4. 48 hours prior to the shut down Incident Commander will notify the fire department and the police department that certain fire hydrants will be out of service and fire suppression capabilities will be reduced.
5. If a street is to blocked the Incident Commander will notify the EMS coordinator of the blockage.
6. Any priority customers in the affected area will be notified by the Incident Commander.
7. Once all notifications have been made the On Scene Commander may shut down service and start repairs.

After Repairs

1. After the repairs have been completed the On Scene Commander will notify the Incident Commander that all repairs are made and service is to be restored.
2. Once service is fully restored the On Scene Commander will notify the Incident Commander.
3. The Incident Commander will notify the fire, police and EMS Coordinator of the return of service and the opening of the street.
4. The On Scene Commander will fill out a Damage Report and fill it with the Utility Manager.

CRITICAL SPARE PARTS & SPECIAL SAFETY EQUIPMENT

The following critical spare parts are maintained in a inventory by the Utility. These parts are stored at the Web Shed and are marked as CRITICAL. This marking is in the form of a tag placed on each part. The Utility Superintendent is responsible for the maintenance of this inventory and tagging parts.

For Water Line Repairs
The Utility Water Lines are composed of
2" class 200 PVC
4",6",8" and 12" C900 PVC
6" AC pipe

Quantity	Location	Size	Item

For Collection System Repairs
The collection system lines are

Quantity	Location	Size	Item

For Failed Lift Stations

Quantity	Location	Size	Item

CALL OUT LISTING

Name/Title	Address	Phone
John Petrich **Utility Manager**	Swinomish Utility Authority P.O. 677 La Conner Wa, 98257	360-466-7223 Fax – 360-466-7219 Home 360 466 4685
Tim White **Utility Supervisor**	Swinomish Utility Authority P.O.677 La Conner, Wa 98257	360-466-7223 Fax – 360-466-7219 Home 360- 466-3002
EMS Coordinator/Safety Officer		
Fire Chief		
Tom Schlicker **Police Chief**	**Swinomish Police Dept** **17353 Reservation Rd.** La Conner Wa 98257	**360-466-7237** **360-466-7236**

KEY PHONE NUMBERS

Swinomish Utility Authority	**John Petrich** P.O.Box 340 La Conner Wa 98257 360-466-7223
EPA - Seattle	1200 6th Ave Seattle, WA 98101 1800-424-4372 206-553-1200
Laboratory	**Dept of Health** Mt.Vernon Wa 98273 360-336-9380
Second Laboratory	**Edge Analytical** 11525 Knudson Rd. Burlington,Wa 98233 360-757-1400
Radio Station	KLKI 2416 Commercial Ave Anacortes Wa 98
EPA	**Craig Paulsen** Region 10 1200 Sixth Ave **Seattle Wa. 98101** **206-553-4350**
Waterworks	Famillian N.W. 2010 Park Ln. 360-757-9794

DAMAGE REPORT

Part 1 - General Information

1. Date of report _____
2. Date and time the water system became aware of the emergency _____
3. Location of break or emergency _____
4. Person or persons who notified the water system of the problem _____

   _____
5. Description of problem _____

   _____

Part 2 - Assessment

1. Time and date crew arrived at scene _____
2. Crew members _____
3. Nature of problem and possible cause _____

   _____

   _____
4. Damage to system _____

5. Damage to adjacent property _____

Part 3 - Action

1. What actions were taken to control the situation:

2. Names of individuals making emergency repairs:

3. Time and date repairs completed _____
4. Work Order Number _____
5. Estimated material cost _____, Labor cost _____

   Equipment cost _____, Contractor cost _____
6. Recommended future action:

Part 4 - Supplemental Information

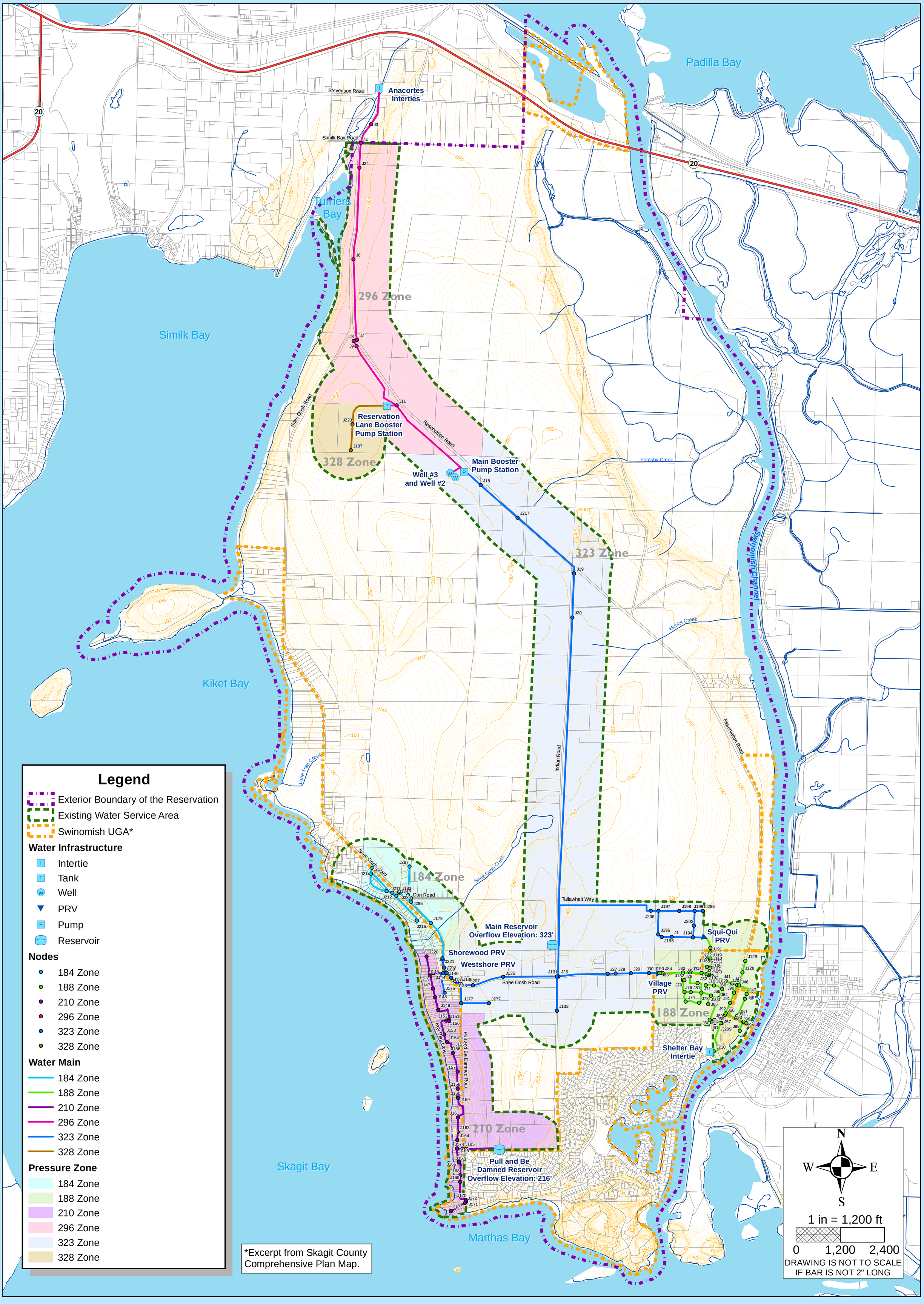
1. If there was disinfection performed - describe which process was used.

2. Water quality sampling;

3. Photos taken:

4. Valves operated:

5. Piping material - size and class _____ _____



SWINOMISH INDIAN TRIBAL COMMUNITY

COMPREHENSIVE WATER SYSTEM PLAN

EXISTING SYSTEM HYDRAULIC MODEL NODE DIAGRAM

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