

**SNOHOMISH HEALTH DISTRICT
ONSITE SEWAGE SYSTEM
MANAGEMENT PLAN**

June 2007



**SNOHOMISH
HEALTH
DISTRICT**

PUBLIC HEALTH
ALWAYS WORKING FOR A SAFER AND
HEALTHIER COMMUNITY

Background

In July 2005 the State Board of Health adopted new onsite sewage system (OSS) rules, WAC 246-272A. One component of these required the local health jurisdictions to write plans for the development and management of all OSS within their jurisdictions.

Subsequently, in March 2006, the State Legislature added a new section to Title 70 RCW (RCW 70.118A) relating to the management of OSS in marine areas. The Snohomish Health District's (SHD) response to the requirements of both actions is included in this plan.

The State Department of Health (DOH) has published guidance documents to accompany both the WAC revision and the new RCW section with the intent of assisting the Puget Sound counties in writing their onsite sewage system management plans. While the Health District recognizes value in the guidance documents, it is also clear that both contain expectations for the local plans that go beyond the legal obligations of the local health jurisdictions stated in the regulations and the law. Therefore, the Health District has elected to write this plan with the legal requirements of the regulations and the law foremost in mind, while referring to the guidance documents for assistance as necessary.

The Snohomish Health District has a strong and efficient onsite sewage disposal program in which a variety of strategies are used to assure that OSS throughout Snohomish County are designed, installed and maintained in such a manner that public health is protected. Therefore, this plan is not an attempt to overhaul the way in which the Health District operates its OSS program. Rather, it is an effort to address the specific requirements of WAC 246-272A-0015 and RCW 70-118A. DOH states in the guidance document for WAC 246-272-0015 that “the intent of the rule and legislation is to provide greater assurance that existing OSS are not causing public health problems, either through inadequate operation and maintenance or outright failure”. The Health District believes strongly that it is very effective in finding and repairing failing systems and this plan will demonstrate how current OSS program activities address these concerns. Additionally, program enhancements will be proposed to further address issues brought forth in WAC 246-272A-0015 and RCW 70-118A.

Plan Format

The management plan takes the following format: Part I addresses the specific local health jurisdiction requirements found in WAC 246-272A-0015. Each requirement is evaluated and addressed by first describing how current Health District activities may apply. Secondly, program enhancements are presented that are intended to further address the particular issue. Part II focuses on the legislature’s requirements under RCW 70-118A for local health jurisdictions to consider the designation of Marine Recovery Areas within their counties. Finally, Part III summarizes the possible program enhancements including estimated costs.

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Snohomish Health District

Onsite Sewage System Management Plan

PART I - WAC 246-272A

When the State Board of Health rewrote the onsite sewage system rules for the State of Washington it included the following section not found in previous versions:

WAC 246-272A-0015(1) Local Management and Regulation

By July 1, 2007, the local health officers of health jurisdictions in the twelve counties bordering Puget Sound shall develop a written plan that will provide guidance to the local health jurisdiction regarding development and management activities for all OSS within the jurisdiction.

Within this section are specific requirements that local health jurisdictions are expected to address. The Snohomish Health District's response to these requirements forms the basis of this management plan.

WAC 246-272A-0015(1)(a)

Progressively develop and maintain an inventory of all known OSS in operation within the jurisdiction

Current Program

The Snohomish Health District was the first local health jurisdiction in the state to develop an electronic data base for the storage of OSS records. Beginning in 1997, under a grant from the Department of Ecology, the Health District began scanning OSS as-built and permit records into the DAVE (Drainfield As-Builts Viewed Electronically) system. DAVE is a module of the Health District's larger Contact Management System and is run on custom written software using ASP.NET 1.1 and C#. The system is maintained and backed up by the Health District's Information Systems Department (IS) personnel. IS is responsible for making changes to the database as needed.

With DAVE, the Health District fully complies with the requirement under WAC 246-272A-0015(1)(a) to "progressively develop and maintain an inventory of all known OSS in operation within the county". Presently, SHD has scanned all existing as-built records (record drawings) into the system with new as-builts entered once they are completed. As of February 1, 2007 there were over 60,000 OSS records in the DAVE system compared with the estimated 75,000 households throughout the county using OSS for sewage disposal.

The screenshot shows a Microsoft Internet Explorer window titled "http://www.snohd.org - PropertyForm - Microsoft Internet Explorer provided by Snohomish Health District". The main content area is titled "CMS - Property Record Information". It contains two main sections: "Property Site Information" and "Property Owner Information".

Property Site Information:

- Site Address 1: 4004 109TH AVE SE
- Site Address 2: SNOHOMISH, WA, 98290-5549
- PTA Number: 00813000000700
- Old PTA Number: 81300000070009
- Year House Built: 1995
- Use Code: 111 Single Family Residence - Detached
- Plat Name: TRILLIUM ESTATES
- Legal Description: TRILLIUM ESTATES BLK 000 D-00 LOT 7

Property Owner Information:

- Owner Name: PLEMEL KEVIN E & TONI M
- Mailing Address 1: 4004 109TH AVE S E
- Mailing Address 2:
- Mailing Address 3:
- City: SNOHOMISH, WA, 98290

DAVE:

- System Type: LPD
- Year Installed: 1994

The status bar at the bottom shows the URL http://www.snohd.org, the time 9:19 AM, and various system icons.

Figure 1 DAVE System Property Record

Figure 1 provides an example of a typical property record from the DAVE system. For known OSS the age of the system is one of the primary fields along with property identification information (tax account number, address, legal description, section/township/range), system type, and owner name. The DAVE system links to the County assessor's records making

additional property information available including the year built for the house. This information can be useful in determining the age of “unknown” and “assumed” OSS. While the system includes fields for latitude and longitude these are not currently utilized.

As of April 2006 the DAVE system has been accessible to the public over the internet at www.snohd.org. Homeowners, realtors and pumpers, among others, are now able to search for OSS records from their own computers without having to call or visit the Health District. This has resulted in a substantial time savings for the District while providing a valuable tool to the homeowner, real estate, and development communities. Currently the public is accessing the system over 2000 times per month. This represents a nearly fourfold increase over pre-Dave queries for as-built information.

Program Enhancements

Other data fields contained within DAVE are planned to be added to specifically address the need to identify unknown systems (more discussion in Section 0015(1)(h)). Therefore, information gathered on previously unknown systems, as a product of various SHD activities, will be captured and entered, including: type of system, reserve area availability, etc.

WAC 246-272A-0015(1)(b)

Identify any areas where OSS could pose an increased public health risk. The following areas shall be given priority in this activity:

(Below represents a listing of the availability of information on the listed areas.)

- Shellfish Protection Districts and Shellfish Growing Areas**

Possession Sound Growing Area (see map Appendix A)
South Skagit Bay Growing Area (see map Appendix B)

These are the only two growing areas currently recognized by the DOH shellfish program. Historically, indications are some commercial harvest of shellfish has taken place in Port Susan as well. However, DOH no longer recognizes the area and has no maps available. A more thorough discussion of Port Susan can be found in Part II of this plan.

Snohomish County Surface Water Management indicates the Stillaguamish River Clean Water District was formed, in part, as a shellfish protection district with one of its stated goals to “Restore water quality in saltwater tidelands to allow the upgrading of conditionally approved, restricted, and prohibited shellfish beds”. (See map Appendix C)

- Sole Source Aquifers Designated by the USEPA**

Cross Valley
Newberg

Refer to the Critical Aquifer Recharge Map by going to:

http://www1.co.snohomish.wa.us/Departments/PDS/Divisions/LR_Planning/Information/Maps/mapsgisdata.htm

- Areas in Which Aquifers Used for Potable Water as Designated Under the Washington State Growth Management Act, Chapter 36.70A RCW are Critically Impacted by Recharge**

Refer to the Critical Aquifer Recharge Map by going to:

http://www1.co.snohomish.wa.us/Departments/PDS/Divisions/LR_Planning/Information/Maps/mapsgisdata.htm

- Designated Wellhead Protection Areas for Group A Public Water Systems**

Refer to the Critical Aquifer Recharge Map by going to:

http://www1.co.snohomish.wa.us/Departments/PDS/Divisions/LR_Planning/Information/Maps/mapsgisdata.htm

- Up-gradient Areas Directly Influencing Water Recreation Facilities Designated for Swimming in Natural Waters with Artificial Boundaries Within the Waters as Described by the Water Recreation Facilities Act, Chapter 70.90 RCW**

Lake Goodwin Community Park

Wenberg State Park
Flowing Lake County Park
Lake Roesiger County Park
Camp Brinkley
Camp Hamilton
Camp Pigott
Camp Killoqua

- **Areas Designated by the Department of Ecology as Special Protection Areas Under WAC 173-200-090, Water Quality Standards for Ground Waters of the State of Washington**

No Special Protection Areas have been established in Snohomish County.

- **Wetland Areas Under Production of Crops for Human Consumption**

The guidance document provides examples under this category – specifically the production of rice or cranberries. While Snohomish County has a significant agricultural industry, when contacted, both the Snohomish Conservation District and the Snohomish County Agriculture Coordinator were unaware of these types of wetland crops currently under production in the county.

- **Frequently Flooded Areas Including Areas Delineated by the Federal Emergency Management Agency and or as Designated under the Washington State Growth Management Act, Chapter 36.70A RCW**

Maps of frequently flooded areas in Snohomish County can be found by contacting the FEMA Map Service Center at www.fema.gov or by contacting the Long Range Planning Division of Snohomish County Planning and Development Services at www1.co.snohomish.wa.us/Departments/PDS/Divisions/LR_Planning/Information/Maps/mapsgisdata.htm. Additionally, flood map information can be obtained at: <http://gis.co.snohomish.wa.us/maps/permits/index.htm>

- **Areas where Nitrogen has been Identified as a Contaminant of Concern**

No areas have been identified at this time. However, the Health District has supplied Snohomish County planning officials with many years of drinking water quality data taken from well water systems, including test results for Nitrate. Given sufficient resources the Health District would be available to work with the county's GIS personnel to analyze OSS and water quality data to determine if specific areas of concern can be identified.

- **Other Areas Designated by the Local Health Officer**

While no other areas are currently designated by the Local Health Officer, a complete discussion of marine recovery areas can be found in Part II, page 23.

Current Program

To date, the Snohomish Health District has not identified nor delineated specific sensitive areas, or areas of special concern as defined in earlier versions of WAC 246-272. This is not to say the Health District does not recognize the potential value of such designations. However, SHD has chosen to take a more comprehensive approach to the issue. As demonstrated above, the potential list of “areas” is long and complex. Further, given the likelihood of overlap and redundancy in the defined areas, the Health District finds it appropriate to view the entire county as area worthy of concern. Consequently, the Snohomish Health District has developed and implemented numerous processes, rules, design standards, etc. with the specific intent of addressing many of the concerns normally found in any “area of special concern”.

As a result, a strong argument can be made that current Snohomish Health District requirements regarding onsite systems, as presently applied countywide, adequately offer enhancement over the minimum requirements to protect surface water and ground water quality in all areas of the county, including the specific sensitive areas designated above. Further, while DOH has clearly indicated the need to “find unknown systems and repair failing systems”, for the above areas, as will be demonstrated later in this plan, the Health District actively and successfully meets this mandate throughout all of Snohomish County.

Examples of enhanced local requirements applied in Snohomish County include:

1. Chapter 8.1.2 of the Snohomish Health District Sanitary Code (Appendix D), which is a rigorous process for review of proposed improvements to existing buildings or structures which utilize onsite sewage disposal systems.

SHD had long recognized the impact of significantly remodeling or rebuilding structures without improving or replacing the existing OSS that may be antiquated or otherwise inadequate to support the new structure. This was particularly true on waterfront property, where part-time recreational cabins were increasingly being replaced or rebuilt with large full-time homes. In response the Health District enacted Resolution 87-35 in 1987 (now chapter 8.1.2).

WAC 246-272-17501 requires an OSS be in full compliance with current standards for expansion of a residence. However, the WAC narrowly defines “expansion” as essentially an increase in bedrooms. SHD has long found this threshold insufficient in assuring that an OSS is in place that is commensurate with the proposed project. Chapter 8.1.2, therefore, requires that **ALL** existing buildings or structures to which additions, alterations, or improvements are made shall be served by an OSS in compliance with current standards. This requirement goes much farther than the WAC by necessitating system compliance for issuance of virtually any building permit on an existing structure.

The local rule does allow the Health Officer to waive full compliance in certain situations., However, to do so requires a thorough review of the site and existing OSS, as well as the proposed project, to demonstrate that, among other things, the existing OSS is adequate to treat the wastewater expected to be generated over the remaining useful life of the structure, and the continued operation of the system will not adversely impact public health, surface water quality, or ground water quality. While Chapter 8.1.2 is applied throughout the county, it has proven especially effective in addressing proposed improvements along marine shorelines, and waterfront property in general. It should be

pointed out that this particular local regulation has been the subject of legal challenge but has survived appeal to the State Supreme Court [*Christianson v. Snohomish Health District – 133 Wn 2d 647 (1997)*].

As a result, SHD has 20 years of experience carefully evaluating OSS while reviewing proposals to add, remodel, expand, repair, or rebuild existing structures. Consequently, numerous systems have undergone extensive upgrades and SHD has gathered invaluable system information for many properties in Snohomish County.

2. In 1990 the Health District began requiring three feet of vertical separation, or an equivalent level of treatment, for all new construction (Sanitary Code Ch. 8.1.1, Appendix E). This was several years ahead of a State mandate of the requirement. This enabled the Health District to assure that the explosive growth that was to take place in the ensuing years would be accomplished with the knowledge that the treatment capabilities of new OSS would be adequate to protect public health. As a result, a far greater number of systems have been constructed to this high treatment standard than required under previous versions of WAC 246-272.
3. The Health District has written policy that defines what is considered a “potential bedroom” (Appendix F). Essentially this policy allows the Health District, not the property owner or builder, to decide what will be considered a bedroom. In Snohomish County it has long been impossible to avoid making required improvements to an OSS by claiming potential bedrooms will be “dens”, “offices”, or “studies”. This loophole still exists in the minimum state requirements. Therefore, in Snohomish County, OSS are sized to the potential use of the residence, not a convenient stated use. Once again, while this policy is applied countywide, it has proven especially useful in the review of improvements on small waterfront lots.
4. In 1999 the Health District enacted strict standards for the construction of water-tight septic tanks (Appendix G). These standards have virtually eliminated the incidence of ground water intrusion which was found to be a significant factor in the failure of onsite sewage systems, especially newer systems installed in areas with a high ground water table that utilize submersible effluent pumps. All septic tank manufacturers selling tanks in Snohomish County must adhere to these standards.
5. The Health District prohibits the creation of new lots with less than 18 inches of unsaturated, permeable soil (Sanitary Code Ch.8.1.8, Appendix H). By contrast WAC 246-272-11501 allows for installation of OSS with a minimum of 12 inches of soil, both for new lots as well as existing lots of record. Consequently, while the WAC allows for creation of lots with minimal treatment capacity, SHD has held subdivisions to a higher standard.
6. The Health District does not allow the creation of new lots using off-site drainfields (Sanitary Code Ch. 8.1.3.1, Appendix I). A newly created parcel must have adequate soil and area to support an OSS and reserve area within the boundaries of the lot. It is clear to SHD that having the OSS on the lot from which the sewage originates is an important step in promoting owner responsibility for monitoring and maintenance.
7. The Health District does not allow a reduced separation between OSS disposal components and water wells for new construction as does WAC 246-272- 09501. The

WAC directly allows the separation to be reduced to 75 feet. In the interest of protecting public health, SHD holds that a minimum separation of 100 feet must be maintained.

When viewed as a whole, these enhanced local requirements can be seen as a fundamental component of the Health District's comprehensive OSS strategy. Applied countywide, enhanced requirements provide assurance that OSS are designed and constructed to consistent high standards. Consequently, many of the same tools, which might be used to protect public health in select sensitive areas, are in use in all areas of the county.

WAC 246-272A-0015(1)(c)

Identify operation, maintenance and monitoring requirements commensurate with risks posed by OSS within the geographic areas identified in (b) of this section

Current Program

The Snohomish Health District has historically chosen to apply heightened design and Operation and Maintenance (O&M) standards for OSS on a countywide basis. Consequently, the Health District has not attempted to impose differing O&M standards based on location. Under this plan the SHD will continue to take the same comprehensive approach and apply O&M standards based on system complexity and/or waste strength issues.

Snohomish Health District currently requires ongoing O&M for the following categories of systems:

- **Alternative Systems**

SHD policy (see Appendix J) requires ongoing O&M for all systems other than simple gravity flow and pressure distribution systems. A covenant is required to be recorded onto the property title which, at a minimum, includes conditions, reservations, and practices pertinent to the system and permit. In addition, prior to issuance of an OSS permit the property owner is required to enter into a service contract with an O&M provider for a minimum of two years, in order to perform regular O&M inspections as specified in the DOH Recommended Standards and Guidance (RS&G) document for the particular type of system.

- **Reduced Sized Systems**

SHD policy (Appendix K) requires ongoing O&M for systems in which the disposal component has been sized using soil loading rates in excess of those required by WAC 246-272-11501(2). A covenant must be recorded onto the property which describes the system type, addresses service agreement requirements, operation and maintenance requirements, reporting requirements, emergency response procedures, and special conditions and agreements. As with other alternative systems, the property owner must enter into a service contract with a qualified individual to perform monitoring inspections in accordance with the inspection and monitoring criteria established in the applicable RS&G. In the case of reduced sized systems inspection reports must be submitted to the Health District.

- **Food Service Establishments**

Before SHD issues their annual operating permit, all food service establishments served by an OSS are required to submit a report by a licensed pumper, installer, or designer showing:

1. The location and date of inspection and by whom the inspection was performed.
2. The condition of the septic tank, i.e. sludge/scum levels, and condition of the baffles. The tank must be pumped if the scum layer is within 3 inches of the bottom of the outlet baffle, the scum layer is within 1 inch of the top of the outlet baffle, or if the sludge is within 12 inches of the bottom of the outlet baffle.

3. The condition of any grease traps; notation to be made if cleaned.
4. Report on the condition of the drainfield. This must be clearly indicated on the pumping receipt or inspection form. Systems using recirculating gravel filters or proprietary waste strength reduction devices must have these components inspected and performance tested on an annual basis as well.

Program Enhancements

See program enhancements related to O&M under WAC 246-272A-0015(1)(g).

WAC 246-272A-0015(1)(d)

Facilitate education of homeowners regarding their responsibilities under this chapter and provide operation and maintenance information for all types of systems in use within the jurisdiction

Current Program

As of February 1, 2007 the Health District has improved its OSS education efforts greatly with a major enhancement of its web site. By accessing the Health District through the web site at www.snohd.org OSS owners and other interested parties can find the following information:

1. Through the DAVE system, as-built drawings of existing OSS are available for viewing and can be printed directly from the web site.
2. When homeowners use the web site to retrieve information about their OSS they will instantly have access to current O&M requirements specific to their type of system.
3. Educational brochures on OSS.
4. Answers to frequently asked questions.
5. Operation and maintenance material for specific types of OSS.
6. What to do in emergency situations.
7. Links to other educational sites on the internet.

In addition to the web site improvements the Health District continues to provide the following services:

1. A sanitarian is always available to answer questions, by phone or in person, during regular business hours.
2. For those without web access, as-built drawings can be requested by phone, fax, or in person. As-builts will be faxed or mailed, free of charge.
3. As-builts are mailed to homeowners upon approval of a new system installation.
4. DOH educational brochures for OSS, and other printed educational material are available at the Health District offices in Everett.
5. Free Videotapes are available to educate homeowners about their particular type of OSS.
6. The Health District continues to have the capacity to make periodic targeted mailings and public service announcements using the DAVE system.

Program Enhancements

The DAVE system offers SHD a variety of means for targeting education. With appropriate resources, DAVE could serve to send out periodic system specific materials regarding operation and maintenance information to property owners.

A summary on DAVE systems upgrades, enhancements and projects can be found in Section 1 of Part III (Program Enhancements) of this plan (pg. 29).

WAC 246-272A-0015(1)(e)

Remind and encourage homeowners to complete the operation and maintenance inspections required by WAC 246-272A-0270

Current Program

Presently the Health District mails O&M reminder letters for two categories of systems.

1. Homeowners of systems which were approved with a reduced sized absorption component, who have not completed their required inspections, are mailed letters reminding them of their O&M inspection obligations. Initial reminder letters are followed up with a second reminder and a final notice before the property is considered in a state of non-compliance.
2. Restaurants equipped with an OSS are mailed a reminder notice in December, along with the invoice for their following year's operating permit. The reminder states that an inspection of the system by a certified pumper, installer, or designer must be completed before their operating permit can be issued.

Program Enhancements

Provided adequate resources, the Health District is prepared to expand its reminder program to include all systems as required by WAC 246-272-0270. Options include:

1. SHD has the capacity with the DAVE system to send out O&M reminders specific to the system type at most properties.
2. Using the Health District web site via DAVE as a means of reminding homeowners of their responsibilities. Provided O&M reporting becomes a function of the DAVE system, DAVE could be utilized to display O&M status online. Based upon the early success of the system, with more than 2000 hits on the site per month, the web could prove to be a useful tool to remind homeowners of their O&M obligations.

A summary on DAVE systems upgrades, enhancements and projects can be found in Section 1 of Part III (Program Enhancements) of this plan (pg. 29).

WAC 246-272A-0015(1)(f)

Maintain records required under this chapter, including of all operation and maintenance activities as identified

Current Program

The Health District uses a second database system in the onsite sewage program to enter and track permit applications as well as other incoming work. This is a Filemaker Pro system comprised of nine individual databases. It is also the system in which limited O&M records received are maintained.

As building and development requests are submitted to the Health District for review the pertinent information from each request is entered into the appropriate database. For example an application for new OSS is entered into the “applications” database while a request to build a garage or an addition is entered into the data base labeled “clearances”. Once entered, the project can be tracked to completion.

It is the “Applications” database that is presently used for tracking O&M activities in addition to permit status. Figure 2 shows a typical screen from the Applications database. Note the fields at the bottom of the screen for both full size and reduced size systems that currently require monitoring. At the present time all O&M information is received in paper form and then entered into the database.

FileMaker Pro

File Edit View Insert Format Requests Scripts Window Help

WWWAPPPermits.fp5

Space PTA

Legal

O&M Required

Well App Rec'd Well App Result

Decl Rec'd Decl Result

Arsenic Followup Itr

Old Declaration

Des Chg

App Result/Date

App Expiration

CI Rec'd CI Revision CI Result Date Field Office GMA Fee

Clear Name

Permit# Express

Final Insp Final Result

Installer

AB Rec'd AB Result/Date AB Past Due Letter

if reduced, put 6 mo. okback field

REduced SIZE MONITORING

O & M Memo 2nd notice Past Due notice

O & M Inspection Deficiency Letter OR Final Notice 6 mo. Checkback

Malfunction Memo Monitoring Complete

SHORT NOTES

FULL SIZE MONITORING

O & M Rec'd

100% Find

For Help, press F1 CMSQueries - Microsoft Internet Explorer provided by Snohomish Health District

Start Inbox - Micr... CMSQueries... Ollivier 9:42 AM

Figure 2

Filemaker Pro

Applications Database

Program Enhancements

The Snohomish Health District has understood for some time that improvements and enhancements to its database environment are desirable. While the dual database arrangement has, for the most part, served the District well, consolidation of all OSS, O&M and program data into a single database system is the goal for the future. Additionally, in order for O&M reporting and record keeping to be feasible, a system of electronic reporting directly into the record keeping database must be developed. SHD's DAVE system would be the logical point of entry for this information.

Consequently, provided adequate resources, SHD intends for the DAVE system to eventually take on all OSS data collection and reporting functions, both for permitting and O&M purposes. The Health District is considering making the following changes to its data system:

1. Construct additional modules in order to combine all OSS program data into the DAVE system.
2. Make the necessary changes to the web site and data system to allow O&M reports to be received electronically.
3. Increase the available fields within the data system to allow for additional information to be stored beyond permit records and as-built drawings. This includes enhancements to the current data collected on previously unknown systems.

A summary on DAVE systems upgrades, enhancements and projects can be found in Section 1 of Part III (Program Enhancements) of this plan (pg. 29).

WAC 246-272A(1)(g)

Enforce OSS owner permit application, operation, monitoring and maintenance and failure repair requirements defined in WAC 246-272A-0200(1), 246-272A-0270, 246-272A-0275, and 246-272A-0280(1) and (2)

Current Program

Under WAC 246-272A-0015(1), the plan developed by the local health jurisdiction must specify how enforcement of these four specific sections of the code will be accomplished. The current SHD program fully addresses three of these requirements. Specifically:

- **WAC 246-272A-0200(1) Permit Requirements**
The Health District currently complies with this section through adoption of WAC 246-272A as the local standard for regulation of OSS. Additionally, Snohomish Health District Sanitary Code Chapters 8.3.1, 8.5, and 8.6 (Appendices L, M and N) outline design and installation requirements consistent with WAC 246-272. Consequently, all elements of this regulation are enforced when an application for OSS permit is received from a licensed OSS designer or professional engineer.
- **WAC 246-272A-0275 Operation, monitoring and maintenance – Food service establishments.**
As stated earlier, the current Health District O&M program includes a requirement that food service establishments be inspected before their annual operating permit is issued. Full compliance with this section has already been demonstrated.
- **WAC 246-272A-0280(1) and (2) Repair of Failures**
The Health District's written enforcement policy (Appendix O) addresses this section. Aggressive enforcement of this section of the regulations is a key element of the Health District's overall OSS strategy. Using this policy, SHD is successful in gaining compliance in 100% of failure violations. In fact, once found, 98% of system failures are corrected within the first 3 steps of this process (generally less than 90 days). To this end, the issuance of 200 -250 repair permits each year places SHD in the forefront of the effort to find and repair failing systems.
- **WAC 246-272A-0270 Operation, monitoring, and maintenance-Owner responsibilities.**

With regards to the fourth requirement , SHD program activities in part address this.The emphasis of responsibility for this section is placed directly upon the property owner. SHD recognizes and values this promotion of owner responsibility. Consequently, many existing program activities are specifically intended to promote owner responsibility and empower system users to meet this mandate.

Additionally, through enforcement of Chapter 8.1.2, SHD withholds approval of building permit applications for remodels, additions, repairs, etc. should a system not be in compliance with current O&M requirements.

Program Enhancements

To further facilitate compliance with WAC 246-272A-270 by the property owner, SHD proposes the following program enhancement options:

1. Expand current SHD O&M program (notices to title, contracts, etc.) to include all systems, including gravity and pressure distribution systems.
2. Initiate a program to review O&M reports that are received, as well as perform follow-up inspections on a pre-determined percentage of systems. This would allow the Health District to gauge the quality of the inspections by O&M providers.
3. Through enhancement of DAVE, electronic O&M reporting, system information, and O&M requirements could be combined to develop a web based system on current system O&M status.

For a summary on enhancements #1 and #2 above, please see Section 2 of Part III (Program Enhancements) of this plan (pg. 29).

A summary on DAVE systems upgrades, enhancements and projects can be found in Section 1 of Part III (Program Enhancements) of this plan (pg. 29).

WAC 246-272A- 0015(1)(h)

Describe the capacity of the local health jurisdiction to adequately fund the local OSS plan, including the ability to find failing and unknown systems

Program Funding

Current Program Funding

Not all current program activities are fee supported. Consequently, the program relies on significant resources from SHD general funds.

Program Enhancement Funding

As for “Program Enhancements”, funding is currently not available from existing program revenue streams. Therefore, any program enhancements not directly supported by an associated new fee will need support from yet to be determined resources.

Potential sources of these funds may include:

1. State Funding
2. Grants/Contracts (i.e. DOE Centennial Clean Water Fund Grants, P.I.E. Funds, etc.)
3. Snohomish County Funding
4. New fees for service

Additional discussion of specific program enhancement funding can be found in Part III of this plan (pg. 31).

Finding Failing Systems

Current Program

With respect to “finding failing ...systems”, SHD has long recognized the importance of this issue and has taken a multi-faceted approach in successfully meeting this mandate.

Numerous reports, studies, and other documents point to “failing septic systems” as a problem that needs to be addressed. Yet none shed a light on the true magnitude of the problem.

However, SHD does not share the view that there are widespread numbers of failing systems in Snohomish County that are not being addressed. SHD does find failing systems and takes aggressive action towards correction.

Finding failing systems takes many forms and cannot be a one-size fits all approach. While sanitary surveys can have merit, lacking data to support the need to conduct a survey, these costly forms of checking system performance often do not produce results commensurate with the resources expended. Consequently, SHD employs a number of other less resource demanding strategies that have historically proven successful in finding failing systems, including:

1. Public Reporting. SHD receives over 250 complaints per year of suspected failing systems. In prioritizing this issue, all reports of failure are investigated within 2 business days (generally the next business day). The reports come from a variety of sources – neighbors, OSS industry professionals, general public, other agencies, etc. Even violators themselves report their own problem and SHD will send a sanitarian out to assess the

situation and offer pathways towards remedy. The process for reporting is easy, confidential and can be anonymous. Additionally, SHD contacts each complainant with the outcome of the investigation.

2. Agency Reporting. SHD receives reports of failing OSS from other county and municipal agencies. Many of these agencies have field staff in places that may encounter failing systems. For example, the Snohomish County Public Works Department, Surface Water Management (SWM) Division reports failures they encounter during their field operations.
3. SHD site visits. While many believe sanitary surveys are useful in finding failures, SHD employs a number of other means to review system function. For instance, given the SHD requirements for building permit issuance, SHD conducts well over 1,000 site visits per year to developed properties throughout the county to determine system function prior to building permit issuance. Additionally, 200-300 developed properties are visited each year in response to numerous other land use review process. Further, while these site visits are generally focused on a specific property, it does offer opportunity to view conditions within the vicinity of the property and interact with the area residents. Consequently, over the course of time, SHD finds itself present in most all locations within the County checking the status of OSS conditions.
4. Relationship with OSS Industry. SHD has a long standing history of good relationships with the various OSS industry professionals operating in Snohomish County. This has served us well in supporting their willingness to report failures as they encounter them.
5. Reduced Barriers to Correcting Failures. SHD supports the process of correcting failures through maintaining low costs of permitting of repairs. SHD has the lowest repair permit fee in the region. This allows the owner's resources to invest in in-ground assets rather than paying for bureaucratic sophistry. Additionally, SHD takes a reasoned approach to repair design concepts, thus being open to economical solutions available under the regulations. Further, SHD prioritizes the repair process. Generally, review times for repair permit applications are no greater than 2 business days (the goal is next day service). Rounding out a streamlined process, SHD's next day final inspection services for repair installations (same day can be arranged) allows repairs to rap up in a timely fashion. Finally, in limited situations the Health District will assist homeowners in the preparation of a repair design. SHD finds that low fees, reasonableness, and timely response have fostered a trusting and open relationship with the OSS industry and the people we serve. The result, a more user friendly process for permitting the necessary repairs of failures.
6. Partnerships with Other Agencies. SHD works to develop partnerships with other agencies for the purpose of finding and correcting failing OSS. For example, SWM and SHD are discussing the potential to partner under a DOE Centennial grant to implement the Snohomish County Septic Program. This prospective program seeks to identify and evaluate means to target areas within the Stillaguamish and Snohomish watersheds for the purpose of identifying and correcting failing systems.

All of the above contribute to SHD success in finding failures. And while finding failures is important, true OSS program success lies in the correction of failures. SHD does find failures and they are corrected. The culmination of the above efforts leads to SHD permitting the installation of at least 50% more repairs per year than similarly sized counties in the region (2006 WOSSA survey report).

Finding Unknown Systems

Current Program

SHD has a long standing history of maintaining good records on systems. Our earliest records date back to 1955. The filing system is well organized, accurate, and mostly complete. Over the past 10 years, SHD has invested significant resources in migrating the paper records to electronic form known as DAVE. Integration of Snohomish County Assessor Records directly into DAVE allows SHD the ability to conduct a variety of analyses to determine the extent of “unknown” systems in Snohomish County.

Current analyses places the total number of OSS systems in Snohomish County at approximately 75,000. As stated earlier, SHD has over 60,000 as-built records within the DAVE system. Consequently, a first cut estimate on the number of “unknown” systems could be set at approximately 15,000.

However, DOH guidance on the matter defines an “unknown system” as:

“an (OSS) that was installed without the knowledge or approval of the local health jurisdiction, including those that were installed before such approval was required.”

To assume that all of the 15,000 systems noted above were installed without the knowledge or approval of the local health jurisdiction is certainly not appropriate. This would assume infallible record keeping on the part of the SHD

In guidance, DOH goes further to define “Assumed OSS” as those that:

“(have) no records but through GIS analysis an OSS can be assumed to exist on a parcel.”

Consequently, it may be that the DAVE system has allowed SHD to at very least find most all the “unknown” systems in Snohomish County, and could, therefore, reclassify these 15,000 systems as “assumed”.

SHD does not view this as the true intent of the regulation. While the DAVE system can give us the above analysis and answer, it is clear there is more to success than merely an exercise in data manipulation. The true success is moving towards classifying as many systems as possible as “Known” rather than merely “Unknown” or “Assumed”.

DOH guidance has interpreted “Known OSS” as:

“an OSS that was installed with the knowledge or approval of the local health jurisdiction. Known OSS include conforming and nonconforming systems.”

Further, [Chapter 246-272A WAC](#) defines “Conforming system” as:

“any on-site sewage system or component, meeting any of the following criteria:

- a) In full compliance with new construction requirements under this chapter; or*
- b) Approved, installed and operating in accordance with requirements of previous editions of this chapter; or*
- c) Permitted by the waiver process under WAC 246-272A-0420 that assures public health protection by higher treatment performance or other methods.”*

To this end, the DAVE system offers SHD additional tools to begin to move from the “unknown/assumed” to the “known” when it comes to OSS.

For various reasons, SHD requires detailed system information for systems that may not have an as-built record. This information has come from a variety of sources. For instance, when SHD conducts review of an existing developed property for building permit, absent an as-built for the system, information on the system is often gathered. Additionally, during other SHD review processes, (e.g. subdivision or boundary line adjustment reviews) similar system information may be obtained.

For the purpose of enhancing SHD’s ability to “know” more about the systems in encounters, SHD has recently modified the DAVE system data set to allow entry of system information during review processes on properties that otherwise would not be classified as “known”. In many instances this information culminates in meeting the threshold established in DOH guidance as a “known” system. While there are numerous SHD activities that will support this process, the most significant is SHD review of building permits for additions/remodels of existing structures.

As outlined earlier, Chapter 8.1.2 of the Snohomish Health District Sanitary Code requires that all existing buildings or structures to which additions, alterations, or improvements are made shall be served by an OSS in compliance with current standards. While the Health Officer may waive full compliance in certain situations, to do so requires a thorough review of the site and existing OSS. Often times this review results in the acquisition of system information sufficient to meet the expectations of a “known” system. It is initially estimated that this process alone could result in potential reclassification of over 200 unknown/assumed systems to the “known” category per year.

Further, inasmuch as Chapter 8.1.2 has been in place for 20 years, the activities associated with administering this rule has resulted in SHD “knowing” more about the systems within its jurisdiction. As a result, SHD has been finding unknown systems and turning them into known systems for a very long time. This is exemplified in the high percentage (~80%) of systems for which an as-built exists.

Program Enhancements (Finding Unknown Systems)

1. DAVE targeted file searches. The DAVE system does offer some data that could be useful in moving unknown/assumed systems into the “known” category. As SHD entered data into DAVE, we have often captured file information beyond system specific information (i.e. as-built information). Often a property record in DAVE contains information regarding other documents contained in the paper file. A rough analysis of this data suggests that possibly 20% or more of the 15,000 unknown/assumed system files contain system information that could be used to evaluate unknown/assumed/known status. This project would involve using DAVE to produce the list of these properties so that targeted file reviews could take place to determine a clearer picture of system unknown/assumed/known status.
2. DAVE Targeted Mail Surveys. DAVE enables SHD to conduct target mailings. The 15,000 unknown/assumed system property owners could be targeted with a survey on

what they know about their system as a means of upgrading our knowledge of these systems.

3. **DAVE Targeted Field Surveys.** DAVE enables SHD to determine the location of the unknown/assumed system properties for selective field survey. This could be particularly effective if piggy-backed on the results of #2 above.

A summary on DAVE systems upgrades, enhancements and projects can be found in Section 1 of Part III (Program Enhancements) of this plan (pg. 29).

WAC 246-272A-0015(1)(i)

Assure that it was developed to coordinate with the comprehensive land use plan of the entities governing development in the health officer's jurisdiction

Current Program

Development of this OSS management plan included SHD request for comment from Snohomish County Planning and Development Services (PDS).

In terms of the current general level of coordination, the Snohomish Health District works closely with PDS on all land use proposals involving properties utilizing OSS. As the permitting agency in the county PDS can, and does, withhold the issuance of permits for a multitude of projects, including building permits, subdivisions, boundary line adjustments, variances, etc., until they are reviewed and approved by the Health District. Likewise, SHD does not undertake permitting of new OSS related projects without PDS development permit issuance.

The coordination between agencies is mutually beneficial. PDS is able to determine if the location of an existing or proposed OSS is consistent with the critical areas regulation and comprehensive plan, while the Health District is able to review proposed projects for compatibility with the OSS.

The Health District attempts to coordinate in a similar fashion with the various cities and towns within the county with varying degrees of success. For most of the cities in the county virtually all development takes place on public sewers. Coordination with these cities with regards to OSS and sensitive areas is therefore less essential.

Snohomish Health District

Onsite Sewage System Management Plan

PART II - Marine Recovery Areas

RCW 70.118A requires that the local health officer propose a marine recovery area (MRA) for those land areas where existing on-site sewage disposal systems are a significant factor contributing to concerns associated with:

1. Shellfish growing areas that have been threatened or downgraded by the Department of Health;
2. Marine waters that are listed by the Department of Ecology under section 303(d) of the federal Clean Water Act for low dissolved oxygen or fecal coliform; or
3. Marine waters where nitrogen has been identified as a contaminant of concern by the local health officer.

MRA designation

For the purpose of determining if and where a marine recovery area should be established the Snohomish Health District completed a review of pertinent data and information relevant to the marine shoreline within its jurisdiction.

Initially, water quality data was reviewed to determine if areas exist that meet any of the three standards under the law. First, records from the State Department of Health Shellfish Program were reviewed to determine shellfish growing areas that have been downgraded or threatened. Secondly, the State Department of Ecology's 303(d) Category 5 list was reviewed for marine waters within Snohomish County that have been listed for low dissolved oxygen or fecal coliform. Finally it was decided, since SHD's health officer has not identified any marine waters in Snohomish County where nitrogen is a concern, that only the first two criteria would be used for the purposes of considering marine recovery designation under the law. This is consistent with the MRA guidance document prepared by DOH.

The establishment of a marine recovery area based on the criteria of RCW 70.118A requires more than simply identifying marine waters with downgraded or threatened shellfish growing areas and/or low dissolved oxygen or elevated fecal coliform. Under the law it must be shown that onsite sewage disposal systems are a significant factor contributing to these concerns. To that end, the SHD used the following sources to help make this determination:

1. SHD records and knowledge of OSS in selected areas
2. Results of previous shoreline evaluations by SHD and others
3. Input from DOH Shellfish Program

For the purposes of the review the Snohomish County marine shoreline along Puget Sound was broken into three discrete sections. Land use, geography, and/or political structure provide each with a unique character helpful in this review.

- **King County north to the Snohomish River**

The southwest portion of Snohomish County is heavily populated and is made up of 9 cities and unincorporated urban areas all contiguous to one another. Collectively this area is identified in the county's comprehensive plan as the Southwest Urban Growth Area (SWUGA). While there are still homes within the SWUGA that utilize OSS, the percentage is small, and for the most part the area is served by public sewer.

Shellfish Growing Areas

The DOH Shellfish Program lists no Shellfish growing areas within this portion of the Snohomish County shoreline.

DOE 303(d) Listings

The DOE 303(d) list has no Category 5 marine listings for low dissolved oxygen or fecal coliform within this area.

Given the inability to show impaired marine waters under either criterion no marine recovery areas have been designated within this section of the Puget Sound shoreline.

- **Snohomish River north to the northern border of the Tulalip Reservation**

This section of Snohomish County shoreline is located almost entirely within the boundaries of the Tulalip Reservation. Given the Tulalip Tribes have jurisdictional authority over the lands within the reservation, it is clear the Snohomish Health District currently does not have direct authority for unilateral designation of marine recovery areas within this reservation area.

Consequently, the Health District and the Tribes would need to work collaboratively to develop the necessary agreements and secure the appropriate resources to allow the District a role in MRA designations and/or subsequent activities within the reservation. The Health District stands ready to work with the Tribes if a need is determined to move forward in this area.

However, for the purpose of a partial address of this issue for this planning exercise, the Health District conducted the following analysis of this area based on the requirements of RCW 70.118A.

Shellfish Growing Areas

A significant portion of the Possession Sound shellfish growing area is located along this stretch of shoreline. While the growing area is currently listed as approved by DOH there are some concerns. As of May, 2006 the DOH Early Warning System for Shellfish Growing Areas in Snohomish County lists two sampling stations as having 'concerns due to water quality'. These are stations 232 and 252. DOH assigns a concerned status if a water sampling station's 90th percentile (minimum of 30 samples) is greater than 20 fc/100ml, but

less than 30 fc/100ml. To reach threatened status, which might allow for consideration of MRA designation, a water sampling station's 90th percentile must be between 30 and 43 fc/100ml.

DOH preliminary data for 2006 shows an overall improvement in water quality for the growing area. Significant improvement was seen in the water quality at station 232, though the 2006 annual report is still likely to state stations 232 and 252 are of concern due to elevated bacteria levels.

Two portions of the Possession Sound Growing Area are listed as prohibited by DOH, the areas around the Tulalip sewage treatment plant outfall and the Hat Island (Gedney Island) marina. However, it should be noted that these are mandatory closure areas based upon the sewage treatment plant and the marina, and not based upon fecal coliform monitoring of sampling stations.

The Shoreline Survey of the Possession Sound Shellfish Growing Area completed by the State Department of Health in 2001 led to the approval of the majority of the North Tulalip portion of the growing area, as well as the shellfish closure zones established around the Tulalip sewage treatment plant and the Hat Island Marina. In evaluating 209 developed land parcels the survey also identified four beachfront communities in which it is recommended that the intertidal harvest of shellfish should not occur until further evaluation of the onsite sewage systems and drainages/discharges takes place. These are McKees Beach, Tulare Beach, Spee-Bi-Dah, and Tulalip Shores. All but McKees Beach are on the Tulalip Reservation. During this survey only one direct OSS failure was observed, however, 67 systems were defined as "potential sources" of pollution primarily due to perceived insufficient setbacks to surface water, lack of drainfield area, and/or excessive slopes. It should be noted, this evaluation did not include review of SHD records for these properties.

The 2001 Shoreline Survey also left as unclassified the area along the southeast shoreline of Hat Island, due to a lack of information regarding the development in that area.

DOE 303(d) Listings

In reviewing the DOE 303(d) Category 5 list for marine waters that have been included for low dissolved oxygen or fecal coliform, there appear to be no listings for this portion of Puget Sound.

In conclusion, given the clear lack of 303(d) Category 5 listings for marine waters with low dissolved oxygen or fecal coliform, as well as no threatened or downgraded shellfish growing areas in which OSS have been determined to be a significant contributor, this portion of the shoreline does not appear to warrant immediate designation of a marine recovery area, even if the Health District had jurisdiction and could do so.

- **Northern border of the Tulalip Reservation north to Skagit County**

South Skagit Bay

Shellfish Growing Areas

This portion of the county shoreline contains the South Skagit Bay Shellfish Growing area. The 2005 Annual Growing Area Review classifies the area as partly conditionally approved and partially prohibited. However, in May of 2006 1344 acres within the area were upgraded to approved. The only prohibited area is located in West Pass near the City of Stanwood sewage treatment plant.

The DOH Early Warning System for Shellfish Growing Areas in Snohomish County lists five sampling stations – two as threatened due to water quality (192,269) and three with concerns due to water quality (180,184,190). Four of the stations are located in Snohomish County while the fifth (190) is located nearer to Camano Island in Island County.

None of the four Snohomish County stations are located near areas with a significant number of OSS in use. In fact, the DOH Shellfish Program does not believe that onsite sewage disposal systems are a significant contributing factor to the pollution problems in the South Skagit Bay growing area. Their view is that the changing water quality at the marine sampling stations is more likely impacted by the Skagit River. They also confirm that the prohibited area in West Pass is due primarily to the sewage treatment plant.

DOE 303(d) Listings

In reviewing the DOE 303(d) Category 5 list for marine waters that have been included for low dissolved oxygen or fecal coliform, there appear to be no listings for the southern portion of Skagit Bay.

In conclusions, given the lack of lack of 303(d) Category 5 listings for marine waters due to low dissolved oxygen or fecal coliform, as well as DOH's view that OSS are not a significant factor in their listing of the four Snohomish County sampling stations as threatened or concerned, designation of South Skagit Bay as a marine recovery area is not warranted.

Port Susan

Found within this portion of Snohomish County shoreline is Port Susan, which lies between the South Skagit Bay and Possession Sound shellfish growing areas. Port Susan is deserving of discussion, as efforts to improve water quality are the focus of a number of state and local agencies, environmental groups and tribes. Port Susan is included as part of the Stillaguamish Clean Water District (CWD).

Shellfish Growing Areas

With regards to shellfish, DOH does not presently recognize Port Susan as a shellfish growing area. However, they have indicated that historically there was an approved harvest

of Eastern soft-shelled clams in Port Susan as late as the mid-1980s. One small area was approved in mid-bay. Port Susan was later closed to harvest in 1987 due to water quality problems, though no decline in water quality was documented at that time. DOH has produced no maps of the area or written any reports in the past 20 years.

There is insufficient data presently available to show OSS as having a significant role in the closure of Port Susan to shellfish harvest in 1987, or for water quality problems in general. In fact, the South Warm Beach Master Drainage Plan (Snohomish County Public Works, Surface Water Management, 2006) reports that when multiple drainage discharges in the Warm Beach area were sampled to identify the source of fecal coliform contamination, it was found that discharges were likely associated with “other sources than septic systems, such as naturally occurring bacteria, wildlife, and domestic pets”. While the report points out that sampling was conducted over a limited time frame, and that failing septic systems could not be eliminated as a potential source of fecal coliforms at other times of the year, the fact remains that the only analysis of fecal coliforms in the Warm Beach area to date, suggests origins other than OSS. This is important since Warm Beach is the only significant cluster of homes on Port Susan using OSS for wastewater treatment and disposal.

DOE 303(d) Listings

A review of the DOE 303(d) Category 5 list for marine waters that have been included for low dissolved oxygen or fecal coliform showed no listings for Port Susan. While the DOH Marine Recovery Guidance directs local health jurisdictions to use Category 5 listings (the 303(d) list) in marine recovery determinations, in the interest of completeness it should be pointed out that there are two Category 4a listings for fecal coliform in Port Susan. Per DOE’s definition, Category 4a includes water bodies that have a water quality improvement project (Total Maximum Daily Loading (TMDL)) in place that is being actively implemented.

In conclusion, given the lack of 303(d) Category 5 listings for marine waters with low dissolved oxygen or fecal coliform, no shellfish growing area presently recognized by DOH, and insufficient data showing OSS as a significant contributor to the downgrade of historical shellfish harvesting areas, this area does not currently meet the criteria for designation of a marine recovery area under the specific requirements of RCW 70.118A.

While the Snohomish Health District cannot designate Port Susan a marine recovery area, it does recognize that many groups continue to be concerned about water quality in Port Susan and question what role OSS may play. Further, it is our understanding that there are talks currently ongoing between the Stillaguamish Tribe and DOH to explore the possibility of reclassifying portions of Port Susan for shellfish harvest. For these reasons the Health District will continue due diligence through existing program activities to insure that OSS throughout the CWD have minimal impact on water quality. The Health District is also willing to work with other agencies in the implementation of the Stillaguamish River TMDL.

In addition, given the unanswered questions about the impact OSS may have on the water quality of Port Susan, the Health District presents a series of proposals which, given adequate resources, would allow the SHD to undertake many of the investigative activities that an

MRA strategy would entail. It is possible that Warm Beach could become the first “hot spot” to be investigated through the Snohomish County Septic Program described earlier. This collaborative effort with Snohomish County Surface Water Management would allow the District to use the DAVE system to focus its area of study upon those residences for which the least amount of information is known.

So, while the Health District cannot designate an MRA , it fully intends to be an active partner in the continuing efforts to improve the water quality of Port Susan. It is important to note that the management plan is only the beginning of this process. To that end the Health District will continually review new water quality data, shellfish certification status and OSS performance data to determine if MRA designation is warranted in the future.

It is therefore intended that a report be presented annually to the Snohomish Health District Board of Health on the implementation of this Management Plan including updates on the status of Port Susan.

For additional information on project proposals directed at Port Susan see Section 3 of Part III (Program Enhancements) of this plan (pg. 30).

Snohomish Health District Onsite Sewage System Management Plan

PART III – Summary of Program Enhancements

Program Enhancements

Section 1: DAVE System Upgrades, Enhancements and Projects

A. Projects	Action
1. Educate system owners regarding system specific operation and maintenance information.	Use the DAVE system to send out periodic system specific materials regarding O&M.
2. Remind system owners of the need to complete necessary O&M inspections.	Use the DAVE system to send out O&M reminders specific to the system type. Frequency of reminders based on system type.
3. Find and evaluate “unknown” systems.	Use the DAVE system to determine properties with potential “unknown” systems. Target these systems with questionnaire mailings to gather information from system owners. Conduct targeted field investigations of “unknown” systems.
B. Upgrades	
1. Online submittals of O&M reports.	Develop and implement DAVE module for online submittal of O&M reports.
2. O&M status available online.	Develop DAVE module for display of O&M status online.
3. DAVE serves as central database for all SHD OSS program data.	Develop and implement DAVE module incorporating all existing OSS program data into one data system.
4. DAVE system includes information on system status: “known”, “assumed”, “unknown”.	Develop and implement DAVE fields regarding system status.

Section 2: Operation and Maintenance Compliance

A. Project	Action
1. O&M covenants recorded for all system types.	Develop and implement O&M process requirements for approvals of all new systems.
2. Review submitted O&M reports for accuracy and completeness.	Develop and implement program rules, regulation, policies and procedures to ensure review of O&M reports. Reviews to include administrative reviews as well as field checks to ensure quality control of O&M inspections and reporting.

Section 3: Port Susan Proposal

A. Project	Actions
1. Given sufficient resources the Health District could undertake a pilot project in the Warm Beach Community. The process would be based on goals and outcomes consistent with Marine Recovery Area designation (RCW 70.118A.040) including identifying all failing and unknown systems by July 1, 2012.	<ol style="list-style-type: none">1. Review of all OSS records2. Review of previous sanitary surveys and/or shoreline evaluations by the Health District, Snohomish County Surface Water Management, and DOH Shellfish program3. Review existing water quality data4. Work with Snohomish County for GIS analysis of OSS records within the DAVE system. Use system age, type, location, and other pertinent criteria to define area to be surveyed.5. Construct a parcel map of the area or areas to be surveyed.6. Perform field inspections to assess OSS performance. Include dye testing and water sampling when appropriate or necessary.7. Require repair of all OSS found to be failing.8. Inventory all previously unknown systems.
2. Given sufficient resources the Health District may apply the strategy developed for/by the Warm Beach Community project to other shoreline communities within its jurisdiction as follows: <ul style="list-style-type: none">o McKees Beacho Hat Island southeast shore	Same actions as above.
3. Given sufficient resources, as well as interest and a contractual agreement with the Tulalip Tribes, the Health District may apply the strategy developed for/by the Warm Beach Community project to one or more of the following areas located within the boundaries of the Tulalip reservation: <ul style="list-style-type: none">a. Tulare Beachb. Spee-Bi-Dahc. Tulalip Shoresd. Sunny Shorese. Lower Shoemaker Roadf. Priest Point	Same actions as above

Costs and Funding

(Costs are estimates only. Funding is currently not provided/available.)

Section 1: DAVE System Upgrades, Enhancements and Projects

A. Project	Units	Cost Type	Total Costs
1. Educate system owners regarding system specific operation and maintenance information.	A. Simple postcard style educational materials @ ~\$1.00 per card. B. “Homeowner Packet” including as-built @ ~ \$3.00 per packet	Ongoing/Onetime Onetime/Ongoing	Dependent on Scale. Dependent on Scale.
2. Remind system owners of the need to complete necessary O&M inspections.	A. Conventional Systems: postcard style reminder @ ~\$1.00 per card per 3 years. B. Other Systems: postcard style reminder @ ~\$1.00 per card each year.	Ongoing Ongoing	~\$20,000 per year. ~\$15,000 per year.
3. Find and evaluate “unknown” systems.	A. Initial DAVE analysis. B. Questionnaire Mailings @ \$3.00 per property. C. Follow-up site visits @ \$200 per site visit	Onetime Onetime Onetime	~\$5,000 ~\$50,000 To be determined based on outcome of questionnaire results.
B. Upgrades			
1. Online submittals of O&M reports.	Develop and implement DAVE module for online submittal of O&M reports.	Onetime	~\$50,000
2. O&M status available online.	Develop DAVE module for display of O&M status online.	Onetime (requires completion of “B.1.” above)	~\$10,000
3. DAVE serves as central database for all SHD OSS program data.	Develop and implement DAVE module incorporating all existing OSS program data into one data system.	Onetime	~\$50,000
4. DAVE system includes information on system status: “known”, “assumed”, “unknown”.	Develop and implement DAVE fields regarding system status.	Onetime	~\$5,000

Section 2: Operation and Maintenance Compliance

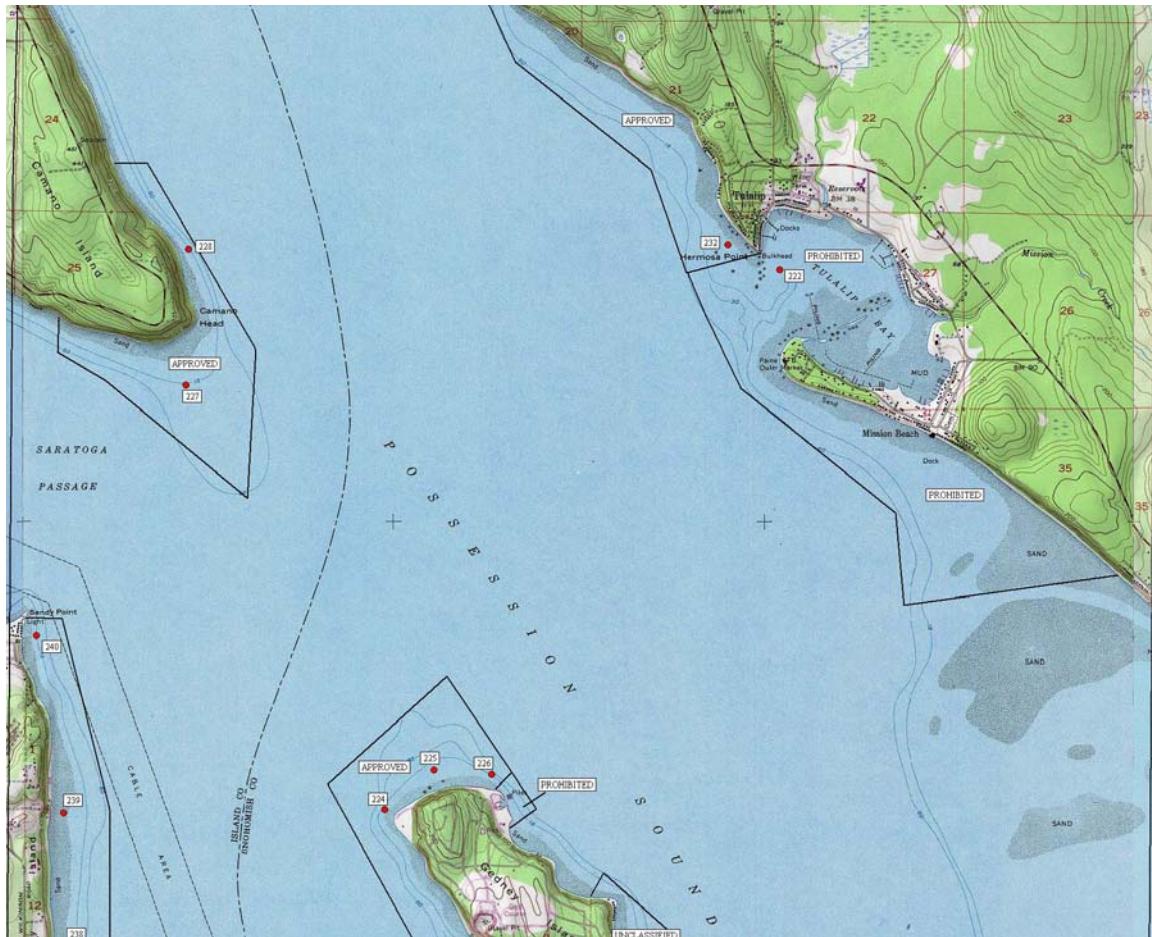
A. Project	Units	Cost Type	Total Costs
1. O&M covenants recorded and initial contracts required for all system types.	<p>A. Develop O&M process requirements for approvals of all new systems.</p> <p>B. Implement O&M process requirements for approvals of all new systems.</p>	<p>Onetime</p> <p>Ongoing</p>	<p>~\$5,000</p> <p>~\$75,000/year</p>
2. Review submitted O&M reports for accuracy and completeness.	<p>A. Develop program rules, regulation, policies and procedures to ensure review of O&M reports.</p> <p>B. Implement program rules, regulation, policies and procedures to ensure review of O&M reports including quality control processes. Unit costs estimated @ \$50/report</p>	<p>Onetime</p> <p>Ongoing</p>	<p>~\$10,000</p> <p>Dependent on participation levels.</p>

Section 3: Port Susan Proposal

A. Project	Units	Cost Type	Total Costs
Conduct a pilot project of the Warm Beach Community.	<p>1. Administrative reviews of records, data, etc.</p> <p>2. Develop target area for field survey.</p> <p>3. Conduct field survey of target areas/properties @ ~\$200/property.</p> <p>4. Follow-up and enforcement.</p>	<p>Onetime</p> <p>Onetime</p> <p>Onetime</p> <p>Onetime/Ongoing</p>	<p>~\$7,500</p> <p>~\$7,500</p> <p>~\$20,000</p> <p>Cannot be determined at this time.</p>

APPENDIX A-1

Possession Sound Shellfish Growing Area



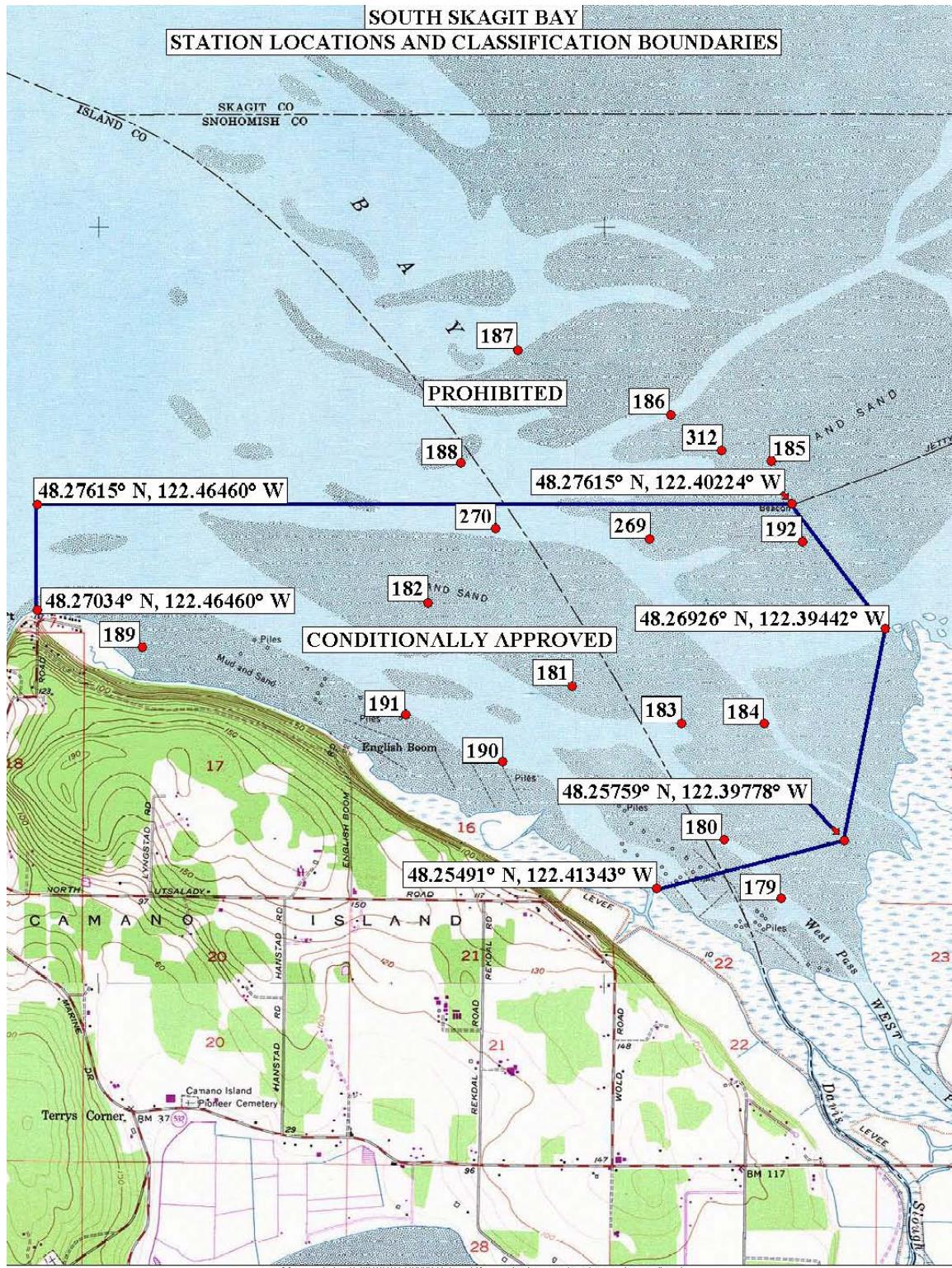
APPENDIX A-2

Possession Sound Shellfish Growing Area



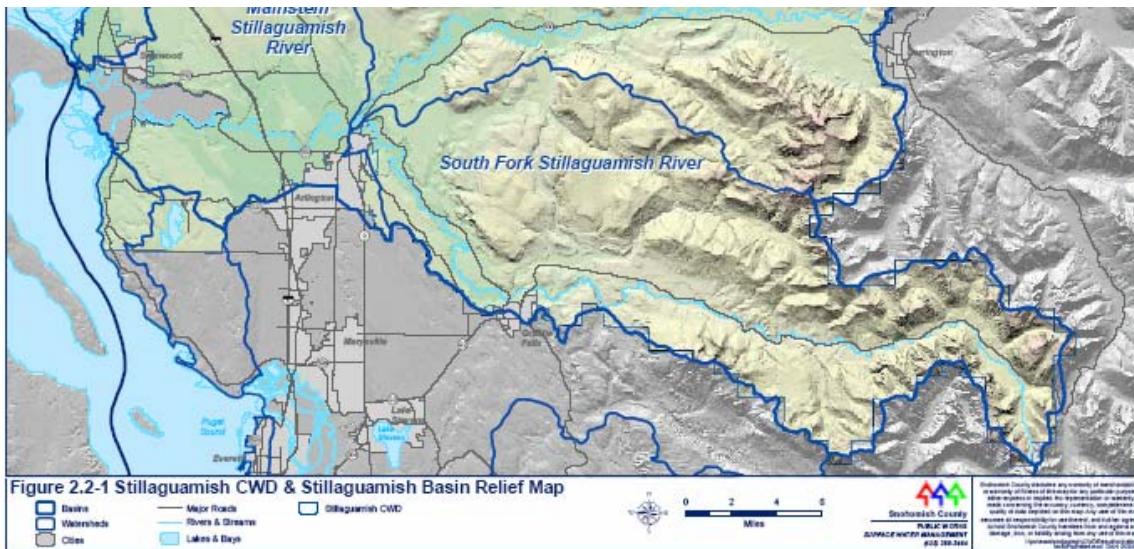
APPENDIX B

South Skagit Bay Shellfish Growing Area



Appendix C

Stillaguamish River Clean Water District



APPENDIX D

SNOHOMISH HEALTH DISTRICT SANITARY CODE CHAPTER 8.1.2 SUPPLEMENTAL ON-SITE SEWAGE DISPOSAL POLICIES AND PROCEDURES (REPAIRS & REMODELS)

8.1.2.1 - Title: These administrative policies and procedures shall be known as the "Supplemental On-Site Sewage Disposal Policies and Procedures" and are established pursuant to authority vested in the Snohomish Health District Board of Health by RCW 70.05.060 and WAC 246-272-020 (formerly 248-96-025(8)). These policies and procedures are adopted for the protection of public health through the mechanism of providing guidance to the Health Officer with regard to the applicability of WAC 246-272 (248-96) to proposed remodeling projects and construction of structures other than residences.

8.1.2.2 - Purpose and Policy Declared: These rules and regulations are enacted as an exercise of the powers and duties of the Snohomish Health District Board of Health to preserve, promote and improve the public health. The provisions herein shall be liberally construed for the accomplishment of these purposes. It is the specific intent of these rules and regulations to prevent the development of any property, to which a public sanitary sewer is not available, to such an extent or in such a manner whereby the amount of any sewage produced on the property would exceed the property's ability to dispose of and treat said sewage effluent in a manner consistent with WAC 246-272 (248-96).

8.1.2.3 - Applicability: WAC 246-272 (248-96) shall apply whenever development or construction of a structure is proposed on any property to which a sanitary sewer is not available and to which water under pressure can be made available.

8.1.2.4 - Remodeling: Approval Required: All existing buildings or structures to which additions, alterations, or improvements are made after the effective date of these policies and procedures shall be served by an on-site sewage disposal system complying with WAC 246-272 (248-96); provided however, the Health Officer may waive compliance with these requirements for existing buildings or structures when additions, alterations, repairs, or improvements to the building or structure are compatible with and do not adversely impact the existing on-site sewage disposal system and potential reserve drainfield area, the system is adequate to treat the on-site sewage expected to be generated over the remaining useful life of the structure, and the continued operation of the system will not adversely affect public health, surface water quality, or ground water quality.

- A. Application for approval by the Health Officer of an existing on-site sewage disposal system serving an existing building undergoing addition, alteration, repair, or improvement shall be made as provided in this section. The application shall be made on forms provided by the Health officer.
- B. The Health Officer shall review all applications to determine compatibility of the proposed addition, alteration, repair, or improvement with the existing on-site sewage disposal system.
 1. Factors that must be considered shall include, but not be limited to, the following:
 - A. Location of septic tank and drainfield in relation to existing foundation and proposed improvements;

- B. Size of drainfield in relation to proposed use;
 - C. Condition of existing on-site sewage disposal system;
 - D. Useful anticipated life of the existing on-site sewage disposal system;
 - E. Potential for reconstruction, replacement, and/or repair of the existing on-site sewage disposal system;
 - F. Ultimate purpose of the remodeling;
 - G. Approved source of water; and
 - H. Potential use of the structure after remodeling.
- 2. The Health Officer may require the applicant to furnish such exhibits and information as may be deemed relevant and necessary to the application.
- C. After reviewing the application, the Health Officer shall notify the building authority and applicant that either:
 - 1. The application is approved, or
 - 2. Correction is required to accommodate the application's approval, or
 - 3. The application is disapproved and the reasons therefore.

Section 8.1.2.5 - Severability: Should any part of these rules and regulations be declared unconstitutional or invalid for any reason, such declaration shall not affect the validity of the remainder.

Section 8.1.2.6 - Effective Date: These rules and regulations shall take effect upon the date of approval by the Washington State Department of Social and Health Services. (July 21, 1987).

APPENDIX E

SNOHOMISH HEALTH DISTRICT SANITARY CODE

Board of Health adopted 9/11/90, Resolution 90-43, Effective 9/27/90

Retitled 11/9/93, Resolution 93-32, DOH reapproval 12/15/94

CHAPTER 8.1.1 VERTICAL SEPARATION

RULES AND REGULATIONS OF THE SNOHOMISH HEALTH DISTRICT BOARD OF HEALTH GOVERNING ONSITE SEWAGE DISPOSAL POLICIES AND PROCEDURES:

1. To protect public health, the Board of Health requires that all new on-site sewage disposal systems are designed and installed in soil conditions and on lots in such a manner to provide a safe level of treatment of sewage containing potentially pathogenic organisms prior to entering groundwaters or restrictive layers.
2. To protect public health, the Board of Health requires that all new on-site sewage disposal systems must have three feet of vertical separation with gravity flow; or two feet of vertical separation with pressure distribution; or the system must meet the requirements of Department of Health alternative system guidelines.

This requirement is effective for all new and renewal applications as of the expiration of ninety (90) days from transmittal of a copy of this resolution to the Department of Health, or earlier in the event Snohomish Health District receives written approval from the Department of Health prior to the expiration of said ninety (90) day period.

APPENDIX F

POLICY STATEMENT REGARDING: INTERPRETATION OF BEDROOM AND DAILY FLOW DETERMINATION

The following standards are to be used when sizing conventional and alternative onsite sewage disposal systems for single family dwellings:

For design purposes, one-hundred fifty (150) gallons per bedroom per day shall be utilized in determining total daily flow for single family dwellings with one (1) through three (3) bedrooms. Single family dwellings with greater than three (3) bedrooms shall use one-hundred twenty (120) gallons per bedroom per day for design purposes. Application rates shall be determined according to soil texture type as outlined in WAC 246-272-110 and the Environmental Protection Agency (E.P.A.) Manual.

For the purposes of creating new lots, WAC 246-272-100 Minimum Land Area Requirement, requires that minimum gross land area exists for a unit volume of sewage (450 gallons per day). Therefore an onsite sewage disposal system application submitted for the purposes of creating a new lot shall designate an onsite sewage disposal system area for a minimum three (3) bedroom single family dwelling. (Note: this regulation has been in effect since July 1984.)

The Snohomish Health District (SHD) considers potential bedrooms as bedrooms regardless of placement of closets and windows, and regardless of door placement or width or location in the structure. Rooms which are considered potential bedrooms include but are not limited to: dens, offices, sewing rooms, studies, computer rooms, music rooms, hobby rooms, lofts, unfinished rooms, bonus rooms, libraries, exercise rooms, etc. The SHD does acknowledge that rooms such as living rooms, dining rooms, storage areas, closets and utility rooms are not typically considered potential bedrooms.

Robert A. Pekich, Director
Environmental Health Division

Date: February 1, 1989

APPENDIX G

Subject: Standards-Watertight Tanks

Effective: September 1, 1999

Author: Brent Raasina, Senior Sanitarian
Water and Wastewater Section

Approved by: _____
Robert A. Pekich, Director
Environmental Health Division

Purpose

To establish minimum construction/design standards to assure watertightness of septic tanks and pump tanks. These minimum standards are intended to minimize the potential of groundwater entry into the tanks and sewage effluent from exiting the tanks except in the proscribed manner. These standards address watertightness only and are intended to compliment existing state and federal construction standards which may be in effect.

Philosophy

The state on-site sewage disposal regulation, WAC 246-272, defines a septic tank as a "watertight pretreatment receptacle..." The OSS Systems installed under the Department of Health (DOH) 1996 revision of the LPD Guidelines requiring the use of timed dosing, first became in operation during the winter of 1998/1999. With timed dosing only allowing the designed flow to be pumped to treatment component, it became evident that many of the tanks were experiencing groundwater entry. Groundwater entry leads to hydraulic overloading of the treatment component thus contributing to premature failure. The DOH is attempting to address this issue in its "Standards for On-Site Wastewater System Tanks" but adoption is still projected for some future date.

Procedure

The following items are the minimum requirements for designation as a concrete watertight tank.

1. Tank Influent/Effluent Gaskets: The gasket must be composed of a rubberized material that is resistant to gases and other forces of its environment, cast into the tank wall to ensure integrity, and capable of accepting a non-corrosive clamp and screw to secure the pipe to the gasket, i.e., boot design. When an effluent outlet is provided in the pump tank, it must be gasketed in the same manner. The clamping of gasket to pipe with a boot design prevents pipe deflection of gasket that may create a gap between gasket and pipe, and greater flexibility of joint to compensate for any settling of tanks or pipe.
2. The sides and bottom must be a mono pour of sufficient mix, and strength to prevent migration of groundwater into the tank and sewage effluent out of the tank.
3. The tank rim and lid base must be free of all irregularities that may prevent a uniform watertight seal.

Standards-Watertight Tanks

Effective September 1, 1999

Page 2

4. The sealant between tank rim and lid must be able to provide a watertight seal regardless of weather conditions or temperature during sealant application.
5. The tank riser(s) must be watertight and placed into tank lid at time of pour. Electrical and effluent pipe that exit the riser must use a rubberized gasket as its watertight seal and must be able to withstand vibration and/or settling.
6. An inspection access (4 inch minimum) at the intercompartmental wall of the septic tank is not required by the SHD to be considered for approved use. The DOH may require it in the future. If an inspection access is provided it must be PVC Schedule 40 or equivalent and cast into the tank lid. It must extend above the tank sufficiently to accept a watertight cap/seal.
7. The tanks must be identified by the manufacturer as watertight. A non-deteriorating identification must be located within the riser or on the tank lid and contain the minimum information of manufacturer's name, a W.T. for watertight, and month/year of construction.
8. Manufacturer must submit for SHD review all tank specifications for tanks with the watertight designation.

The following are the minimum requirements for designation as non-concrete watertight tank.

1. The tank riser(s) must be an integral part of the tank and provide a watertight seal/joint at connection to tank and at any riser extensions. A rubberized grommet must be used when exiting the riser with electrical or pump lines.
2. The riser lid must be lockable, water and gas tight, and allow for ease of removal for servicing and inspection.
3. The tanks must be bedded per the manufacturer's specifications. They must also be installed in a manner to prevent movement due to buoyancy during periods of high ground water conditions.
4. The inlet/outlet must be capable of accommodating a flexible rubberized joint approved for this use, and secured by a non-corrosive clamp and screw to tank inlet/outlet and pipe. The flexible joint secured in the noted manner will allow for any settling of tank or pipe deflection during backfill while maintaining watertightness.
5. An inspection access (4 inch minimum) at the intercompartmental wall of the septic tank is not required by the SHD to be considered for approved use. If one is provided it must be an integral part of the tank body and must extend above the tank sufficiently to accept a watertight cap/seal.

The minimum standards in this policy will remain in force until the SHD notes otherwise.

APPENDIX H

CHAPTER 8.1.8

USE OF SAND FILTER SYSTEM/MOUND SYSTEM ON SITES WITH 12" TO 18" OF SUITABLE SOIL

- I. The Snohomish Health District may approve the use of a mound system preceded by a sand filter for existing legal lots of record when site conditions comply with all requirements described in **Section IV**, Paragraph (A) of the Department of Health Guidelines for the Use of Fill or Mound Systems, dated November 1986.
- II. The Snohomish Health District will not approve the creation of new lots, parcels or tracts that would utilize the sand filter/mound system on sites with only twelve inches (12") to eighteen inches (18") of suitable soil.

APPENDIX I

SNOHOMISH HEALTH DISTRICT SANITARY CODE CHAPTER 8.1.3.1

RESTRICTED USE OF EASEMENTS RULES AND REGULATIONS OF THE SNOHOMISH HEALTH DISTRICT BOARD OF HEALTH PROHIBITING THE CREATION OF BUILDING LOTS DEPENDENT UPON OFF-SITE EASEMENTS FOR ON-SITE SEWAGE DISPOSAL DRAINFIELDS:

In the interest of the public health, the Snohomish Health District Board of Health, does, for the sake of clarity, adopt the following additional statement to WAC 246-272-010 (16) (WAC 248-96-020(12)) for the definition of "on-site sewage system":

1. However, relative to the creation of new lots, all such piping, treatment devices or other facilities that convey, store, treat, or dispose of sewage, including replacement systems, shall be located within the boundaries of the lot where the sewage originates.
2. So that the local definition of on-site sewage system shall in its entirety read as follows:

Any system of piping, treatment devices, or other facilities that convey, store, treat, or dispose of sewage on the property where it originates or on adjacent or nearby property under the control of the user where the system is not connected to a public sewer system. However, relative to the creation of new lots, all such piping, treatment devices or other facilities that convey, store, treat, or dispose of sewage, including replacement systems, shall be located within the boundaries of the lot where the sewage originates.\

Board of Health, adopted 6/6/89, Resolution 89-30, Effective 8/29/89
Retitled 11/9/93, Resolution 93-32, DOH reapproval 12/15/94

APPENDIX J

POLICY REGARDING: Operation and Maintenance Alternative Systems Meeting Treatment Standard 1 and/or 2

PURPOSE

The Washington State Department of Health (DOH) Effluent Quality Based Drainfield Systems Recommended Standards and Guidance Document (RS&G) requires that a procedure be implemented to assure proper on-going operation & maintenance (O&M) of alternative onsite sewage systems serving sites where either Treatment Standard 1 or 2 must be met.

Operation and maintenance requirements protect the public health by assuring that owners are aware of their sewage systems and their responsibility to provide ongoing O&M.

BACKGROUND

In order to comply with this requirement, Snohomish Health District (SHD) will require the following for all applications and renewals submitted for review upon the effective date of this Policy when an alternative system is proposed and Treatment Standard 1 or 2 must be met:

- 1) An O&M Covenant outlining permit conditions and reservations and practices must be filed onto the property title. At a minimum the Covenant shall include conditions and reservations and practices as listed on Attachment "A" Example Covenant. A draft copy of a Covenant shall be included with the application for onsite sewage disposal system permit. A conformed copy of the recorded Covenant must be provided prior to approval of building construction clearance and/or installation permit; and,
- 2) A signed O&M service contract(s) for the entire wastewater system with a State Licensed Designer, SHD Certified Installer or qualified Professional Engineer for a minimum two year period prior to building construction clearance approval and/or installation permit issuance. A manufacturer-authorized representative shall perform O&M service on a proprietary aerobic treatment unit and/or disinfection unit of a system. O&M minimum maintenance activities and service items shall be in accordance with the applicable RS&G document(s); and, at a minimum shall include an initial inspection six months after the system is installed and operating, and annually thereafter; and,
- 3) The O&M service contract(s) shall be renewable.
- 4) The O&M service provider reports must be made available for SHD review upon request.
- 5) All new application submittals and renewals are subject to the payment of a one year SHD operation and maintenance monitoring fee prior to building construction clearance approval and/or permit issuance. The fee, as set in the current SHD fee schedule, will support record management, tracking, and follow up SHD homeowner education and information activities.

This policy is effective April 16, 2001.

Robert A. Pekich, Director
Environmental Health Division

Date

Attachment

APPENDIX K

Subject: **Reduced Size Soil
Absorption Systems**

Effective: May 17, 1999

Supersedes: Sand Filter Systems
April 11, 1997

Revised: April 1, 1999

Author: Randal S. Darst, Manager

Approved by: _____
Water and Wastewater Section
Robert A. Pekich, Director
Environmental Health

Division

Philosophy

The Washington State Department of Health (DOH) Recommended Standards and Guidance documents set forth standards for the design, installation, operation and maintenance of alternative onsite sewage disposal systems. While the guidelines provide a comprehensive set of general standards regarding alternative systems they lack standards and operating procedures which take into consideration local conditions and concerns. Of particular concern is the lack of state and local performance data on reduced sized soil absorption systems, which use soil loading rates in excess of those required in WAC 246-272-11501(2)(k), herein referred to as a reduced size soil absorption system.

Purpose

To allow limited use of onsite sewage disposal systems which utilize soil loading rates in excess of the rates specified in WAC 246-272-11501(2)(k), in order to gather information and data relative to their performance in Snohomish County, and to develop a process to assure compliance with DOH operation and maintenance requirements together with a mechanism for funding Snohomish Health District (SHD) supervision of data collection and management. The SHD will review and evaluate this Policy, and the use of reduced size soil absorption systems after receiving performance data from a significant representation of local installations and may make appropriate modifications to this Policy as a result.

Procedure

The following procedure sets forth conditions under which the SHD will allow reduced size soil absorption systems.

- A. The parcel must be an existing legal lot of record.
- B. The onsite sewage disposal system shall be located within the property line boundaries of the lot containing the structure to be served.
- C. This option cannot be used in combination with any other drainfield size reductions as may be provided for in the Guidelines or Health District Sanitary Code.

- D. This option cannot be used in combination with Health District policy regarding redundant drainfields.
- E. All design, installation and monitoring requirements as set forth in the applicable DOH Guideline and this Policy shall be followed.
- F. When trenches are used they shall be appropriate for the site, shall not exceed three feet in width, and shall be separated by a minimum of six feet of original undisturbed soil between sidewalls.
- G. The onsite sewage disposal system application shall include a *Declaration of Covenant* which describes the system type, addresses service agreement requirements, operation and maintenance requirements, reporting requirements, emergency response procedures, and special conditions and agreements. The covenant shall describe and acknowledge any special conditions for approval of a reduced size soil absorption system using increased soil loading rates as outlined in the DOH Guideline and this Policy, including but not limited to the following:
 - 1. Owner's understanding and acknowledgment that the onsite sewage disposal system is designed and approved in accordance with the applicable Department of Health Guideline and SHD Policy.
 - 2. Owner's understanding of their responsibility and obligation to assure proper operation and maintenance of their system and to provide performance monitoring inspection reports to the SHD. Performance monitoring inspections must be conducted by a certified onsite sewage system designer or professional engineer two times per year (once every six months) during the first and second year following installation of the system and annually thereafter and in response to complaints or problems. Inspection reports shall be submitted to the SHD upon completion.
 - 3. Monitoring is to be in accordance with the inspection/monitoring criteria established in the applicable guideline issued by the Washington State Department of Health and shall also include requirements contained in the Snohomish Health District Sanitary Code and Policies regarding the use of reduced sized soil absorption systems.
 - 4. Upon request for release of Health District installation permit, Owner agrees to provide SHD a copy of a service contract with a certified onsite sewage system designer or professional engineer to conduct a sewage system operation inspection and conduct (or coordinate) preventative maintenance every six months for the first two years after the system is installed, approved and operational. Contract to set forth minimum inspection report data to include water use figures, effluent dose volumes and frequencies, observed and measured ponding in trenches after dose, etc.
 - 5. Upon request for release of Health District installation permit, Owner agrees to pay fees to the Snohomish Health District which will cover costs the District will incur for operation and maintenance records management for a minimum two year period; such fee established in the Snohomish Health District Fee schedule.

6. It is the Owner's obligation to immediately report any failure, damage, or change of conditions relating to the onsite sewage disposal system to the Snohomish Health District.
7. It is the Owner's agreement to not cause any part of the system to become non-functional or ineffective.
8. It is the Owner's agreement to grant the Snohomish Health District the right to enter the property during normal business hours for purposes of routine inspections for onsite sewage disposal system monitoring and enforcement of the Sanitary Code and this Policy.

H. Prior to issuance of the onsite sewage disposal system installation permit the following shall be provided to the SHD:

1. A copy of the recorded operation and maintenance covenant.
2. A copy of an operation and maintenance service agreement with a certified designer or professional engineer.
3. Payment of SHD operation and maintenance records management fee for a minimum two year period.

APPENDIX L

SNOHOMISH HEALTH DISTRICT SANITARY CODE CHAPTER 8.3.1 ON-SITE SEWAGE DISPOSAL CONSTRUCTION REQUIREMENTS

In accordance with WAC 246-272-230 Installer Requirements (formally WAC 248-96-175), the following specific installation requirements are required in order to maintain a high level of quality control throughout the on-site sewage disposal system construction process.

On-Site Sewage Disposal System Installation:

- I. The Snohomish Health District shall require certified installers to construct the on-site sewage disposal system, except as noted under subsection **II.** of this section. In all cases, construction of the on-site sewage disposal system shall include system back fill and final grading.
- II. The health officer may allow the owner of a single family residence to install the on-site sewage system for his/her single family residence when:
 - A. The on-site sewage system is a conventional gravity or LPD system;
 - B. A certified installer performs all installation work not done by the resident owner.
- III. The installer shall:
 - A. Follow the approved design. Design revisions must have the concurrence of the designer and Health District before commencing work;
 - B. Have the approved design and permit in possession during installation;
 - C. Be on the site at all times during the construction of the on-site system;
 - D. Install the on-site system to be watertight, except for the disposal component;
 - E. Cover the installation only after the local health officer has given approval to cover;
 - F. Back fill and grade the site to prevent surface water from accumulating over any component of the on-site system.

SHD Policy Effective 6/1/92; Retitled 11/9/93, Resolution 93-32;
DOH reapproval 12/15/94

APPENDIX M

SNOHOMISH HEALTH DISTRICT SANITARY CODE

CHAPTER 8.5 ON-SITE SEWAGE DISPOSAL SYSTEM PERMIT PROCESS AND INSTALLATION PROCEDURES

The process herein described relates to the permit process for application proposals for construction of new on-site sewage disposal systems. This process does not apply to an application to repair, replace or alter an existing on-site sewage disposal system.

I. Application to the Water/Wastewater Section for an on-site sewage disposal system permit.

- A. Application and review fee are received from a Certified Designer or Engineer. A review is conducted in accordance with sewage disposal/water supply requirements and department procedures.
- B. Issuance of the decision to approve or disapprove an application results in either an approved application or a denial. An approved application received after December 31, 1991, is valid for three (3) years and can be renewed for an additional two (2) year period, with written concurrence from the system designer, review and approval from the Health District and payment of a renewal fee.

II. Issuance of the on-site sewage disposal system permit.

- A. Upon receipt of a request for building permit clearance for the subject use from the city or county building department, a permit to install the approved on-site sewage disposal system will be approved for issuance providing the building department site plan and the Health District site plan are compatible.
- B. The on-site sewage disposal system is valid only when issued concurrently with the building/development permit. The permit will then remain valid for the term of the building/development permit. Expiration or termination of the building/development permit will cause the on-site sewage system permit to expire. Renewal of an expired on-site sewage disposal system will require submittal of a new application and payment of fees.
- C. In no case will an on-site sewage disposal system permit be issued prior to issuance of the building permit for the proposed structure.

III. On-site sewage disposal system installation:

- A. The Snohomish Health District shall require certified installers to construct the on-site sewage disposal system, except as noted under subsection **II.** of SHD Chapter 8.3.1. In all cases, construction of the on-site sewage disposal system shall include system back fill and final grading.
- B. The health officer may allow the owner of a single family residence to install the on-site sewage system for his/her single family residence when:
 1. The on-site sewage system is a conventional gravity or LPD system;

2. A certified installer performs all installation work not done by the resident owner.

C. The installer shall:

1. Follow the approved design. Design revisions must have the concurrence of the designer and Health District before commencing work;
2. Have the approved design and permit in possession during installation;
3. Be on the site at all times during the construction of the on-site system;
4. Install the on-site system to be watertight, except for the disposal component;
5. Cover the installation only after the local health officer has given approval to cover;
6. Back fill and grade the site to prevent surface water from accumulating over any component of the on-site system.

SHD Policy Effective 1/1/88; Revised 3/20/92; Retitled 11/9/93, Resolution 93-32 Page 2
DOH reapproval 12/15/94

APPENDIX N

SNOHOMISH HEALTH DISTRICT SANITARY CODE Chapter 8.6 SYSTEM PERMIT APPLICATION DESIGN & AS-BUILT STANDARDS

A completed application shall consist of adequate written and physical site information to support the issuance of a permit for on-site sewage disposal. Such information must be presented in the prescribed written format and the proposed site prepared in sufficient detail to allow visual examination of its characteristics. A uniform presentation format is intended to provide consistent evidence of compliance with **WAC 246-272, On-Site Sewage Disposal Systems.**

8.6.1 Site Identification and Preparation.

- A. Property line shall be identified by corner flagging.
- B. Access to on-site sewage disposal system site shall be flagged and identified with applicant's name, or property tax account number.
- C. The path to the on-site sewage disposal system site shall be flagged and cleared.
- D. Drainfield and reserve area must be sufficiently cleared so as to make ground surface contours easily observable. Further staking of proposed laterals may be necessary to demonstrate the feasibility of installation.
- E. All soil test holes shall be flagged and numbered to correspond with the lot number and soil log number as shown on the design. If soil test holes are part of a proposed short plat, test hole identification shall include the proposed lot number.
- F. If a mound system or any other type of bed is being proposed, the four (4) corners of the mound basal area or bed corners shall be staked or flagged and labeled as "mound corner" or "bed corner". Additionally, the mound or bed reserve area shall be flagged or staked and identified.

8.6.2 Soil Evaluation.

- A. Soil log test holes shall be placed so as to demonstrate representative soil types in the on-site sewage disposal system area and reserve area.
- B. Provide for each single family dwelling, a minimum of three soil logs in representative parts of the on-site sewage disposal system area and two soil logs in the reserve area. Drainfield areas other than for a single family residence must have at least two soil logs for every 500 sq. ft. of disposal area and in no case shall there be less than four soil test holes.
- C. Separate these holes by at least 50 feet.
- D. Soil test holes shall be constructed, identified and maintained to prevent injury or damage to the general public.

SNOHOMISH HEALTH DISTRICT SANITARY CODE CHAPTER 8.6 SYSTEM PERMIT
APPLICATION DESIGN & AS-BUILT STANDARDS, continued

- E. Soil log holes must be dug to the appropriate depth to justify meeting current minimum vertical separation requirements.
- F. The holes shall be of sufficient diameter for the reviewer to obtain representative samples from the soil profile and determine soil color, texture, structure of each horizon and the water table.
- G. Soil test holes must be kept open for inspection until review by a representative from the Snohomish Health District.
- H. After Snohomish Health District application review has been completed, the property owner/designer is responsible for backfilling and covering soil test holes on the property.
- I. Additional tests, such as percolation tests, sieve analysis, hydrometer tests, and bulk density determinations may be required if in the opinion of the Health Officer they are necessary for proper soil evaluation of a specific site. Percolation tests shall be conducted in accordance with the **Falling Head Percolation Test Procedure** as outlined in the **EPA Design Manual, Table 3-8**.
- J. All soil tests must be performed in a manner consistent with the requirements of the **Department of Health Interim Soil Evaluation Guidelines. (Nov. 1979)**

8.6.3 On-Site Sewage Disposal System Application and Design Standards. Design of sewage disposal systems shall be such as to accommodate all sewage from the buildings and premises to be served and in accordance with **WAC 246-272**, the State On-Site Sewage Disposal System Regulation. The type of system shall be determined by location, soil porosity, soil texture, ground water level and other relevant conditions.

- A. Complete the Application for an On-Site Sewage Disposal System Permit form including, but not limited to:
 1. Directions to the subject property (include vicinity map if needed).
 2. Address or approximate address of property.
 3. Name of current owner and name of system designer.
 4. Type of building proposed. If other than single family residence, include estimated daily wastewater flow.
 5. Classifications used for logs of subsurface soil conditions shall be in USDA Soil Conservation Service terminology such as sandy loam, clay loam, medium sand, hardpan, rock, etc. Any evidence of a seasonal water table including color and mottling must be noted and described. These soil log notes must be attached to the application for review and verification.

SNOHOMISH HEALTH DISTRICT SANITARY CODE
CHAPTER 8.6 SYSTEM PERMIT APPLICATION DESIGN & AS-BUILT
STANDARDS, continued

6. Source of domestic water. (1) If public water (any source other than an individual supply serving one single family residence) is provided, identify by name and include a letter from the purveyor confirming water availability and commitment to serve (2). If an individual water supply (well) is proposed, the proposed well site must be shown on the design in relation to the proposed drainfield areas. In addition, a well site application (detailing the well site and its 100 ft. pollution control zone) may be submitted for concurrent review.
 7. Trench depth, width and required square footage of drainfield laterals.
 8. If an alternative system is proposed include all information, construction details, calculations, etc. as required in the **Department of Health Guideline** as well as any specific Health District requirement.
 9. Signature of designer and date of field testing.
 10. Any redesign submittals reflecting changes to the application cover sheet must be accompanied by a new, original carbon application form (not copies).
- B. Complete and submit **4 copies** of an on-site sewage disposal system design and plot plan and include:
1. The plot plan is to be dimensioned and drawn to a scale which shows one inch to be equal to no more than thirty feet. Indicate compass direction by using a north arrow. If the entire parcel/lot cannot be included on a 1"=30' scale, an overall plot plan of the lot including location of residence, drainfield and easement (if proposed) shall be required in a smaller scale in addition to the 1"=30' design (i.e., 1'=100').
 2. If a short plat is proposed an overall plot plan indicating the layout of the lots (in relation to each other) shall be submitted in addition to the individual designs.
 3. Show elevations at soil test holes and topographical contours at two feet intervals in the drainfield and reserve area.
 4. Show wells, other sources of potable water and other surface water bodies within 100 feet of property lines.
 5. Identify and show location of soil test holes.
 6. The proposed on-site sewage disposal system and proposed site of the structure shall be located by giving dimensions to at least two intersecting property lines. Show driveway parking, and any other proposed paving locations.
 7. Any proposed well site shall be shown together with the minimum circular area of protection having a radius no less than 100 feet.
 8. Construction plan specifications to include: Plumbing stub-out elevation in relation to a monumented reference point; a minimum and maximum trench depth; an expected amount of cover soil required; the lateral lengths and method of distribution; location of interceptor, curtain or footing drains, dosing system specifications, etc.

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9. Show all required separations as required by **WAC 246-272-140** Location.
10. All drainfield laterals shall be shown as dashed lines, with tightlines shown as solid lines.
11. Reserve area boundaries shall be labeled and shown by outlining, or by shading of the area or showing the laterals using double dashed lines and identifying as reserve.
12. If an alternative system is proposed include all information, construction details, calculations, etc. as required in the applicable **Department of Health Guideline** together with any specific Health District requirements.
13. Design on sloping sites greater than 10% shall include a trench/slope cross-section detail demonstrating compliance with minimum vertical separation and trench depth requirements.

8.6.4 "As-Built" Plans

Whenever a designer has approved an installation, a completely scaled and dimensional as-built plan of the approved sewage disposal system shall be prepared in triplicate by the designer of the system. As-built forms, provided by the Snohomish Health District, shall be completed and signed by the designer and within thirty (30) days, forwarded to the Health District. The following plan details are required:

- A. Location of the essential components of the sewage disposal system including:
 1. Septic tank.
 2. All plumbing stub outlets.
 3. Tightline between buildings and septic tank.
 4. Tightline between septic tank and distribution box, inspection box or drainfield line.
 5. The distribution box.
 6. All drainfield lines. The length of each individual drainfield shall be shown together with the total number of lineal feet of drainfield line.
 7. The location of any construction feature, such as a stepdown, must be clearly indicated.
 8. Distances between drainfield lines and the edges of any cuts, banks, property lines, lakes, streams, wells, driveways, water lines, fills, interceptor ditches.
 9. Location, size, shape and placement of all structures on the building site showing their relative location to the sewage disposal system and to any easements, water service supply lines, property lines, etc.
 10. Location, direction of flow, and discharge point of all ground or surface water interceptor drains.

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11. Orientation of drawing with North direction by arrow.
 12. Pump model number and manufacturer if applicable.
 13. Pump chamber size and dose volume if applicable.
- B. Alternative system as-builts shall include applicable items described in Chapter 8.6.4, section "A." together with an owner's operational manual as required in the appropriate **DOH Guideline** and as specified in the conditional approval letter.
- C. Location, size and dimensions of the 100% reserve area shall be shown in relation to the sewage disposal system components, listed in Chapter 8.6.4, section "A."
- D. If the reserve area is designated as a mound system, the configuration shall be shown and clearly identified as mound system/reserve.
- E. Clearly indicate scale. Recommended scale is one inch equals twenty feet. Scales utilizing ratios in excess of one inch equals thirty feet are not acceptable.
- F. If the entire parcel/lot cannot be included on a 1"=30' scale, an overall plot plan of the lot including house and drainfield location as well as the easement (if necessary) shall be required in addition to the detail 1"=30' design.

8.6.5 Deficiencies

Failure to meet all of the above requirements may result in further submittal/inspection and/or payment of additional fees.

8.6.6 Snohomish Health District Policies and Procedures

(See Addenda)

APPENDIX O

ENFORCEMENT PROCEDURE GUIDELINES

Upon Snohomish Health District (SHD) verification of an on-site sewage disposal system (OSS) failure as defined by *Snohomish Health District Sanitary Code, Chapter 8.1* (WAC 246-272) the following process shall be instituted.

STEP 1 NOTICE OF CORRECTION

An initial Notice of Correction shall be sent to the property owner. The Notice of Correction shall be sent by regular and certified mail and include the following information:

1. The location of the failure, including the site address and/or property tax account number.
2. The date the failure was verified by SHD.
3. A description of the failure.
4. The pertinent legal citation(s).
5. Acceptable options for correcting the failure.
6. The date by which the failure is to be corrected.
7. A statement that informs the property owner that it is his or her obligation to notify SHD of their intentions and schedule for correction.

The Notice of Correction shall typically require correction of the failure within 30 days of the date of the notice. SHD may shorten or extend the time period for correction based upon the specific nature of the failure; taking into account the severity of the threat to public health, life safety concerns, or other issues which may call for an alternative time frame.

Upon expiration of the stated time period for correction, or upon receipt of claim that the failure has been corrected, SHD shall reinspect the property to determine the status of the failure. Should the failure have been corrected in a manner consistent with WAC 246-272-16501 enforcement action shall be suspended.

If upon reinspection of the property the OSS is found to be failing, SHD will proceed to Step 2 of these Enforcement Procedures.

Appendices A and B are two examples of a typical Notice of Correction.

STEP 2 FINAL NOTICE OF CORRECTION

If after completion of Step 1 of these enforcement procedures, it is found that the OSS has not been corrected in a manner consistent with WAC 246-272-16501, a Final Notice of Correction shall be sent to the property owner. The Final Notice of Correction shall be sent by regular and certified mail and include the following information:

1. The location of the failure, including the site address and/or property tax account number.
2. The date of the initial Notice of Correction.
3. The date of reinspection and statement that the failure has not been corrected.
4. A description of the failure.
5. The pertinent legal citation(s).
6. The date by which the failure is to be corrected.

7. A statement that informs the property owner that it is his or her obligation to notify SHD of their intentions and schedule for correction.

The Final Notice of Correction shall typically require correction of the failure within 15 days of the date of the Notice. SHD may shorten or extend the time period for correction based upon the specific nature of the failure; taking into account the severity of the threat to public health, life safety concerns, or other issues which may call for an alternative time frame.

Upon expiration of the stated time period for correction, or upon receipt of claim that the failure has been corrected, SHD shall reinspect the property to determine the status of the failure. Should the failure have been corrected in a manner consistent with WAC 246-272-16501, the enforcement action shall be suspended.

If upon reinspection of the property the OSS is found to be failing SHD will proceed to Step 3 of these Enforcement Procedures.

Appendix C is an example of a typical Final Notice of Correction.

STEP 3 HEALTH OFFICER'S ORDER

If after completion of Steps 1 and 2 of these Enforcement Procedures it is found that a failing OSS has not been corrected in a manner consistent with WAC 246-272-16501, a Health Officer's Order shall be sent the property owner. Actions requiring issuance of a Health Officer's Order must be reviewed and approved by the Manager of the Water and Wastewater Section and the Director of Environmental Health. The Order shall be sent by regular and certified mail and include the following information:

1. The location of the failure, including the site address and/or property tax account number.
2. The date(s) of Notice(s) of Correction.
3. The date the property was reinspected.
4. The date by which the failure is to be corrected.
5. The pertinent legal citation(s).
6. The Health Officer's Order number.
8. The signature of the Health Officer.

The Health Officer's Order shall typically require correction of the failure within 30 days of the date of the Order. SHD may shorten or extend the time period for correction based upon the specific nature of the failure; taking into account the severity of the threat to public health, life safety concerns, or other issues which may call for an alternative time frame.

Upon expiration of the stated time period for correction, or upon receipt of claim that the failure has been corrected, SHD shall reinspect the property to determine the status of the failure. Should the failure have been corrected in a manner consistent with WAC 246-272-16501 enforcement action shall be suspended.

If upon reinspection of the property the OSS is found to be failing, SHD will proceed to Step 4 of these Enforcement Procedures.

Appendix D is an example of a typical Health Officer's Order.

LEGAL ACTION

If after completion of Steps 1, 2, and 3 of these Enforcement Procedures it is found that a failing OSS has not been corrected in a manner consistent with WAC 246-272-16501, the case will be reviewed by the Manager of the Water and Wastewater Section and the Director of Environmental Health for approval to send to SHD legal counsel for preparation of legal action against the property owner. While the specific means of legal action shall be left to the discretion of SHD counsel, typical legal action shall consist of the following:

STEP 4 Letter Of Intent To File Suit In Court

A letter shall be sent to the property owner by certified mail giving notice of intention of SHD to pursue in court, the proper correction or, in the alternative, the vacation of the property until correction is made. The letter shall give a time frame (typically 14 days) in which corrective action may be taken before the complaint is filed with the court. A courtesy copy of the draft summons and complaint shall be enclosed with the letter.

Appendix E is an example of a Letter of Intent to File Suit in Court.

STEP 5 Initiation of Lawsuit

If after completions of Steps 1, 2, 3, and 4 it is found that a failing OSS has not been corrected as directed in Step 4, SHD legal counsel shall initiate a lawsuit against the property owner in Superior Court. The written Complaint shall be served upon the property owner via Summons issued pursuant to Rule 4 of the Superior Court of the State of Washington. Counsel shall pursue the lawsuit to resolution.

Appendix F is an example of a Summons and Complaint.