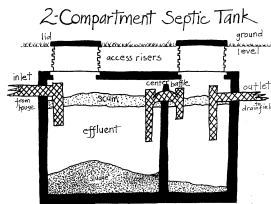


The Skagit County Public Health Department



On Site Sewage System Management Plan



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Appendix D Resolution to create Citizens Advisory Committee R20070034

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Appendix G Map 1 of Group A and Group B wells

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Executive Summary

Purpose of the Plan

The purpose of the on site sewage system management plan is to provide guidance, focus and direction to the Skagit County Public Health Department's on site sewage program. The management plan will guide the policies and procedures for the design, installation, operations and maintenance of on site sewage treatment systems in Skagit County in order to prevent public health hazards and risks, and to improve, restore and preserve water quality.

Organization and Plan Framework

The Skagit County Public Health Department's on site sewage system management plan is organized into six parts. The first part is an Executive Summary containing a brief history and a summary of planned activities for the on site sewage program. The remaining five parts are based on guidance the Washington State Department of Health (DOH) provided to the Health Department. The two guidance documents provided by DOH were the On Site Sewage System Management Plan Guidance (June 2006) and Marine Recovery Areas Guidance (October 2006). These documents, provided to all Puget Sound Counties required to develop an on site sewage system management plan, provide the structure of the plan to help assure similar goals are achieved.

The Skagit County Public Health On site sewage management plan is based on the requirements set forth in Washington Administrative Code 246.272A. 0015, *Local Management and Regulation*, and Revised Code of Washington 70.118A.030 "Local health officers to develop a written on site program management plan."

Vision Statement

It is the mission of the Skagit County Public Health Department's on site sewage program to bring all the on site sewage systems in the county to performance standards established by the Washington State Department of Health by 2020.

This will be achieved through application and enforcement of Skagit County Code 12.05, *On Site Sewage Code*. This chapter has been amended by Environmental Health staff, reviewed by a Citizen's Advisory Committee, will be available for public comment June and July 2007, and presented for final approval by the Skagit County Board of Health in August 2007. These rules and regulations will assure the continued performance of on site sewage treatment systems in Skagit County for the life of the system, and therefore protect and preserve public health and water quality in Skagit County.

On Site Sewage Management Plan Goals

The primary goal to achieve this vision is to permit, track the design, installation, operation and maintenance of all on site sewage systems by 2012. In order to achieve this goal the Health Department will:

1. Inventory all assumed and unknown on site sewage systems in Skagit County by July 2012 *with an emphasis on Marine Recovery Areas once established*;
2. Determine the operational status of all on site sewage systems in Skagit County by July 2012;
3. Ensure the repair of all known failures by July 2012 and thereafter, within three months of identification;
4. Reduce the incidence of failing on site sewage systems and ultimately prevent failures of on site sewage systems in Skagit County; and
5. Improve and restore water quality by 2012 in Marine Recovery Areas and other impaired water bodies in Skagit County to acceptable levels to the extent they have been impacted by failed or inadequate on site sewage treatment systems.
6. Manage on site sewage system operations and maintenance (O&M) by means of database tracking.
7. Refine an already established on site sewage system O&M inspection procedure.
8. Establish a structure of incentives, fines and penalties to enforce the rules and regulations.

Measurable Program Objectives

Measurable objectives to determine if the on site management plan goals have been achieved include:

1. Increase the number of on site sewage systems in the inventory of the Septic Manager database from current numbers (approximately 9,000) to approximately 20,000, or as near as possible to 100% of on site sewage systems in Skagit County by 2012;
2. Increase the number of on site sewage system inspections each year to approximately 12,000 per year (4,000 gravity and 8,000 non-gravity) by 2012, or approximately 60% of on site sewage systems inspected annually;
3. Analyze the number of failures identified and assure by 2012:
 - a. 100% of identified failures are repaired within three months of identification,
 - b. that failing on site sewage systems are reduced over time (thereby indicate that prevention efforts are effective);
4. Improve and restore degraded fresh and marine waters as to fecal coliform standards, dissolved oxygen standards and shellfish growing area standards to the extent they have been impacted by failed or inadequate on site sewage treatment systems by 2012; and
5. Maintain water quality standards in fresh and marine waters that currently meet standards indefinitely as potentially impacted by on site sewage treatment systems.

Strategies for Achieving the Objectives

Strategies to achieve the measurable objectives include:

1. On site sewage permit and O&M data analysis through a process of:
Skagit County Public Health Department
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- a. database development and enhancement;
 - b. data “scrubbing” (to correct inaccuracies) of current and archived data to assure accurate and current data;
 - c. Retrieval and sorting of data;
 - d. Assigning new and old OSS permits to appropriate parcels.
2. Identifying marine recovery areas (MRA’s).
 3. Identifying sensitive areas that have the potential to impair and impact marine or fresh waters;
 4. Informing property owners in MRA’s and sensitive areas of their OSS status and the resources available to maintain their systems;
 5. Developing and expanding community and public involvement with citizen’s advisory committees;
 6. Continuing to provide educational and outreach resources;
 7. Providing financial resources such as low interest loans for repair of failures;
 8. Providing financial incentives such as the inspection and upgrade rebate program; and
 9. Providing penalty and incentive mechanisms for O&M inspection compliance.

Program Limitations, Challenges and Resources Needed for Full Implementation

There are several needs that must be met for full implementation of this plan. It will be possible to gain efficiencies with improvements to data entry, but full implementation will be dependent upon identifying and obtaining financial and personnel resources.

1. Data Management
 - a. Database currently under development to streamline and provide query building tools.
 - b. Staff time limitations for entering and analyzing data.
2. Code Revisions
 - a. Enforcement of new O&M inspection requirement. Currently, enforcement action is taken for failing on site sewage systems, but not for lack of O&M inspections.
 - b. Revise Health Department Schedule of Charges to include a fine structure for lack of an O&M inspection.
 - c. Provide incentive for property owner to obtain an O&M inspection in a timely manner.
3. Staff time limitations
 - a. Enforcement; lack of resources to follow-up O&M data showing corrections needed or failure.
 - b. GIS limitations; there is limited capacity for the Health Department staff to use the current GIS program and limited time for Skagit County GIS Department staff to assist the Health Department with GIS development.
 - c. Community Outreach; lack of enough staff to develop this intensive process.
 - d. Inability to focus pollution identification and track sources of fecal contamination.
4. Industry Limitations
 - a. Certified O&M provider limitations and capacities.
 - b. On site sewage system designer capacity to meet increase demand for repairs.
 - c. On site sewage system installer capacity.

Funding

Current funding through Clean Water Program dollars, permit fees and State dollars covers the cost of all current activities in the on site sewage and operations and maintenance programs in Skagit County (between \$320,000 and \$400,000 annually). To fully implement the Skagit County On Site Sewage Management Plan would require two additional full-time equivalent Environmental Health Specialist positions and an additional half-time support staff position, or an additional \$170,000 to \$180,000 annually.

Additionally, Skagit County has a robust program for repairs to failing on site sewage systems via low-interest loans via Ecology's Centennial Clean Water Fund, offers rebates for repairs of septic systems and installation of risers. These loan and grant programs are on a periodic cycle and require reapplication on a regular basis.

Introduction to the Skagit County

Public Health Department's On Site Sewage System Program

The Past

Permitting of septic systems in Skagit County began in 1958. The census of Skagit County then was approximately 51,000 and there were essentially no community or municipal wastewater treatment plants. On site sewage treatment systems were completely conventional gravity with no design, review or professional installation. A homeowner could order a 300 gallon metal septic tank and clay tile from a catalogue and install it himself. It is estimated there were at least 5,000 to 10,000 systems installed prior to permitting. Many older septic tanks were homemade and either poured in place concrete, laid brick or cinderblock, and even cedar planks, many of which were made without bottoms and became essentially cesspools.

The Health Department had oversight of permitting the design and installation of septic systems until the late 1970's. At that time the Board of Health (the three County Commissioners) moved the program to the Planning and Permit Center, where the focus became permitting rather than public health. This change occurred as a result of two things: a community conflict was created when the Health Department conducted several sanitary surveys of septic systems in the County resulting in complaints to the commissioners; and citizens wanted to obtain a septic system permit at the permit center since that was where building permits were issued. As a result "one stop shopping" for on site sewage permits was transferred to the Planning and Permit Center.

In addition there was not political support for the Health Department to maintain this program's enforcement arm, which often manifested itself as a refusal to permit building sites with poor soils.

The Present

After nearly three decades, permitting of on site sewage systems was returned to The Health Department in January 2000. The public did not see a change, however, personnel responsible for permitting on site sewage systems who worked in the Permit Center became Health Department staff, and supervision of this staff was transferred to the Environmental Health Supervisor in the Health Department. At this time the Operations and Maintenance (O&M) program was started as well and one full time employee was hired to develop and implement this program. An O&M plan was developed and implemented and comprised of several parts and phases:

Certification of O&M Specialists. The first part consisted of the **certification** of O&M providers including pumpers and specialist who provide the services promoted by the Health Department. (O&M providers and the program meet quarterly).

Education and Outreach to on site sewage system owners. The second part consisted of the development of an education, information and outreach program (including Septics 101 clinics for homeowners, food service establishments and realtors, and Septics 201 septic tank inspection field class).

Inspection Reports developed. The third part consisted of developing an O&M inspection procedure and report form so services provided could be documented.

Database Development. The fourth part consisted in the development of an O&M database so documented O&M services can be stored and data sets could be retrieved.

Health Department Licensee Operational Permits. The fifth part consisted of all Skagit County Public Health licensee's including food service establishments, mobile home parks, campgrounds, and temporary worker housing are required to have an annual O&M inspection of their OSS before issuance of an annual operating permit.

Community Involvement and Data Integration. The fifth part instituted the integration of O&M data and assessor's information in order to assess the status of septic systems in specific geographic areas of Skagit County in order to promote septic system maintenance. This was and is still done with community involvement in some form of citizen advisory or liaison committee(s) in several communities in Skagit County.

All of these parts were developed over the last six years and have been augmented in part by several grants received from the Puget Sound Action Team and the Washington State Department of Ecology. Funds from the project proposals have helped promote septic system operation and maintenance through advertising and social marketing, and the County septic education program, namely the Septics 101 Clinic. The Health Department has offered over 90 Septic clinics since September 2000 with over 2,000 attendees to date.

Most notable of the recent grants received has been the *Septic System Improvement Pilot Project* from the Washington State Department of Ecology. This pilot project involves targeting affected areas where water quality concerns exist both in marine and fresh waters in Skagit County. These areas are identified using both Department of Ecology Water Quality Assessment, Category 5, (previously 303(d) list) waters and local water quality monitoring data from Skagit County Public Works ([Skagit County Water Quality Monitoring Program](#)) and the Washington State Department of Ecology ([DOE Water Quality Assessment](#)). This data is used to create maps displaying known, unknown and assumed on site sewage systems at residences in areas where sewers do not exist. Each residence is categorized according to on site sewage permit and operations and maintenance (O&M) status;

Red represents parcels with homes (with a minimum living area) with an **assumed or unknown** on site sewage system represented by the fact there is no record of a permit or O&M inspection;

Yellow represents parcels with a **known** on site sewage system with a record of a permit or some maintenance record on file such as a recent pump out of a septic tank, but no O&M inspections;

Green represents parcels with a **known** on site sewage system with either a permit on file and or a recent O&M inspection or repair.

An example of a map made of the Yokeko Point, Dewey Beach, Quiet Cove (South Fidalgo Island east of Deception Pass) area made in November 2003:

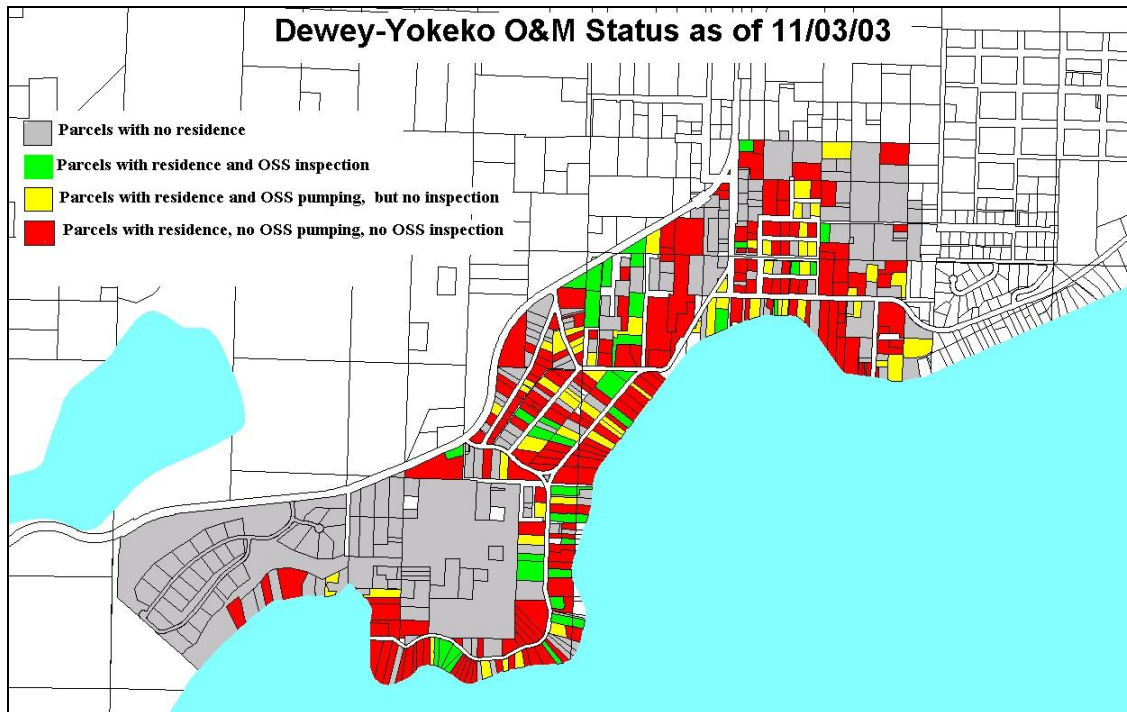


Figure 1 O&M status display map

The maps are included in letters sent to target communities or regions to illustrate the problem in the affected areas. The letter describes what each property owner needs to do, and includes the resources to do it. These resources include a list of Skagit County certified O&M providers, a Septics 101 schedule, and a rebate brochure and application. The septic improvement project incorporates a “market based solution” to O&M by providing an incentive of a \$100 rebate to homeowners to have their septic systems inspected and another \$100 for the installation of lids and risers. Eligibility requirements include attendance at a Septics 101 Clinic, the services provided are from a Health Department certified O&M provider, and that the O&M provider submits an O&M report to the Health Department.

This particular community was the first and only **Area of Special Concern** established in Skagit County in October 2005. A group of citizens concerned about the public health risks associated with non-existing on site sewage systems (straight pipes to the shorelines) approached Skagit County Environmental Health about dealing with this situation. In addition to non-existent systems, they were also concerned about the lack of routine maintenance of existing systems, as well as the age and condition of many older inadequate systems. A Yokeko Point, Dewey Beach, Quiet Cove (YDQ) liaison committee was formed and through hundreds of mailings and many community meetings, this Committee worked with the Health Department in informing their neighborhood of the importance of on site sewage treatment and operations and maintenance and resolved many of the community’s sewage disposal issues. ([Resolution 2005035](#) – Appendix A)

The Skagit County Board of Health also adopted into the on site sewage code the Recommended Standards and Guidance for Proprietary Treatment Products on February 14, 2006 in order to enforce the O&M requirements of these products. ([Resolution 20060057](#) – Appendix B). The proposed revision to SCC 12.05, *On site sewage*, will include adoption of subsequent Recommended Standards and Guidance for Proprietary Treatment Products.

On the same day the Board of Health adopted a resolution requiring inspections of on site sewage systems at time of property transfer, which became effective April 2, 2006. ([Resolution 20060056](#) -- Appendix C). As a result of these requirements O&M inspection reports filed with the Health Department have increased nearly five- fold in 2006.

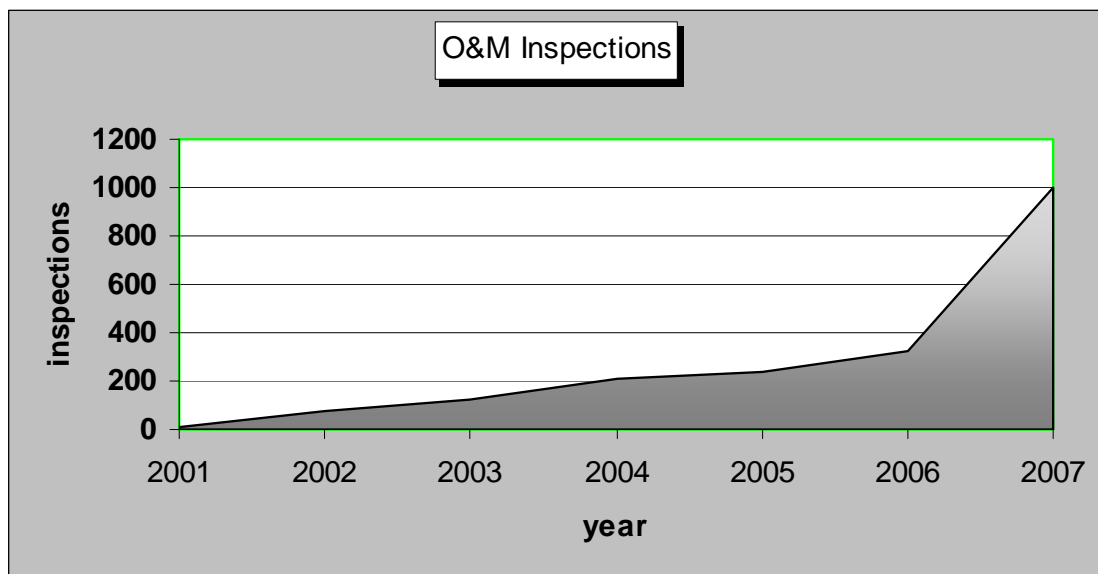


Figure 2 O&M inspections by year – unduplicated

Of greater importance in Skagit County was the funding of the Clean Water Program on December 20, 2005 ([Resolution 20050487](#) -- Attachment E). Though a County-wide Clean Water protection district (Shellfish Protection District) was established March 27 1995, the funding portion of the program was never passed by the Board of County Commissioners. Arriving on the County Commissioners desks the day before the public vote for Initiative 601 to roll back Motor Vehicle Excise Taxes, poor timing conspired to stall the funding of the Clean Water District.

To resolve the County’s dilemma to deal with multiple water quality issues, Skagit County Commissioners took up this effort again in 2005. The end result was a resolution that recognizes that every citizen contributes in some way to the degradation of water quality. These dollars will fund programs and projects to reduce non-point pollution in unincorporated areas of the County. Specifically, the on site sewage O&M program will benefit as a result of establishing a Clean Water Program budget and annual rates and charges.

Skagit County Health Department has just completed an on-site sewage code review with a Citizen’s Advisory Committee (CAC). This Committee was appointed by the Skagit County Board of Health. ([Resolution R20070034](#) – Appendix D). The CAC met bi-weekly from February through May, 2007. This Committee reviewed both the code revision proposals and the On-Site Management Plan proposals.

In summary the Skagit County Public Health Department’s On Site Sewage program has implemented a plan in the last seven years to permit the design and installation of OSS, and to inform, educate and promote the operation and maintenance of septic systems.

The Future.

It is the Skagit County Public Health Department's intention to continue this effort, incorporating requirements stated in the new on site sewage Rule. As Chapter 246-272A WAC and Chapter 70.118A RCW mandates, and the State Department of Health's guidance document makes clear, every county bordering Puget Sound must inventory all unknown and assumed on site sewage systems by July 1, 2012 and determine their operational status. If a septic system is found to be failing, the Health Department must see to it that property owners repair these systems. This **five year management plan** contains five primary topics, each with its own set of goals and objectives. They are:

1. **Data management and enhancement.** To categorize all on site sewage systems in Skagit County as known and have an indication of their operational status (working satisfactorily, corrections needed, or failure);
2. **Identification of sensitive areas** including **establishing marine recovery areas**; To identify areas where according to a variety of parameters on site sewage systems can pose an increased risk to public health when failed or not operating acceptably;
3. **The operation and maintenance requirements in sensitive areas.** To require and enforce routine O&M inspections in sensitive areas and to have failures repaired;
4. **Establishing marine recovery areas and a strategy toward attaining recovery.** To establish marine recovery areas as outlined in WAC 246.272A.0015, RCW 70.118A.030; and
5. **Education, information, advertising and social marketing.** To change people's behavior and empower them so they act responsibly to properly operate and maintain their on site sewage system.

In addition the Skagit County On Site Sewage Management Plan through all aspects of the plan will show how the Health Department will:

1. Show progressive improvement in finding failing systems.
2. Show progressive improvement in working with OSS owners to make needed repairs.
3. Take steps to find previously unknown systems and ensure they are inspected as required and repaired as necessary.
4. Show progressive improvement in the percentage of OSS that is included in an electronic data system.
5. Show progressive improvement in the percentage of OSS that has had required inspections.

Part 1 -- Database enhancement

Introduction

The Health Department presently has two active on site sewage databases; a permitting database ***Permits Plus***, and an operations and maintenance (O&M) database ***Septic Manager***.

The Past

The ***Permits Plus*** database started live for building and on site sewage permits in 1994, with a DOS- based program called Sierra Permits. In 1995 Planning was added. In 1999 the application migrated to a Windows based program call “Sierra Permits Plus”; at this time Accela Corporation bought Sierra. Information Services Department pays Accela an annual maintenance fee, which includes periodic updates, which are then installed perhaps once per year. The user interface is Access, and the data is all on SQL.

Permits Plus is a proprietary program which tracks all County permit activity in the county including the permitting of on site sewage systems. Permits Plus organization is by Projects; type, description, numbering system and subtype. Septic permits issued after 2000 are prefixed with a SW, such as SW00-0001 for the year 2000; prior to the year 2000, septic permits were labeled with an S, such as S99-001 for 1999. Permit records began in 1958. According to the Permits Plus administrator there are 12,147 OSS systems in Permits Plus as of December 2006.

Septic Manager is a Windows based program utilizing C+ programming. This program was developed with a Skagit County Health Department employed systems analyst during the years 1999-May 2005. Information from Permits Plus and the assessor’s databases are connected to Septic Manager providing parcel number, address and permit history. The data from the two databases is updated daily with a programmed routine when information in Permits Plus and Septic Manger are linked. Data in Septic Manager is updated immediately when data is entered and is available in house. The data is updated routinely every 24 hours in Permits Plus. The information is available to the public the following day by means of the internet on the Skagit County website.

Septic Manager was built with the capacity to link data from the permit application and the Skagit County Assessors’ database. This connectivity is a policy of the Information Systems Department and is implemented county wide. The Assessor’s database contains all the parcel information and is utilized as the web-site interface for the public.

The Present

The greatest challenge with **Permits Plus** is the data integrity issues related to parcel, address and permit information. Due to policy changes in addressing, GIS parcel shifts, parcel changes made by the assessor's office, and data inconsistently inputted into the database over the years, much of the information requires individual review and correction when necessary. For this reason on site sewage permits are not automatically associated with a permit in **Septic Manager**, but are manually assigned to a parcel number in **Septic Manager** when O&M data is received from an O&M provider. This auditing and quality control assures that the information entered into **Septic Manager** reflects an on site sewage system that has been installed, rather than one that is planned and issued a permit to be installed at some time in the future (the permit becomes void after five years).

The Septic Manager database has **9,733** OSS records. This makes a difference of 2,400 OSS records between Permits Plus and Septic Manager. The discrepancy exists because of the assigning required in Septic Manager before the parcel becomes live in the O&M database. In the assessor database the utilities field has **19,689** records that contain the phrase 'SEP' indicative of a septic system. This is our best available estimate of the **assumed** number of septic systems in Skagit County. This data is inputted by the Appraisers indicating the property has a septic system or could have a septic system. Therefore the number of known OSS is **12,147** and the number of unknown OSS is in two categories: **7,542** without permits; and **9,956** systems that are unknown and have not had operational inspections since installed. 2,366 inspections reports have been submitted to date (September 2007) since the beginning of the O&M program.

Category	Source	Number
Assumed	Assessors	19,689
Assumed	Permits Plus Database	12,147
Known	Septic Manager Database	9,733
Unknown	Assessors minus Permits Plus (Site and type)	7,542
Unknown	Assessors minus Septic Manager (Operational status)	9,956
Known	Inspections reports in Septic Manager_(unduplicated)	2,366

Data entry into Septic Manager is manual. Hard copies of "On site septic system summary reports" (Appendix E) and "On site tank pump and service records" (Appendix F) are submitted on a monthly basis to the Health Department by O&M providers. It is written in rule that the reports be submitted at least 30 days from service. It is policy for an O&M provider to notify the Health Department of a failure within 24 hours, especially if there is a public health risk.

The forms were developed in cooperation with the O&M providers through a series of quarterly meetings and continue to be improved as needed. (See Part 5, Education planned for O&M providers). Environmental health staff enters the data as reports are received. Data entry involves a series of steps to insure the data is stored correctly:

1. Every on site sewage systems **location** is verified using parcel number, address and often property owner.

2. Septic manager has the ability to be formatted to detail all the components of a particular OSS and to label the **type** of system. With O&M report in hand the database is checked to see that tank types, size and actual number of tanks are correct, as well as drainfield type. Other components such as disinfection units are added as necessary.
3. At this point if there is an appropriate OSS permit with a status of completed or final in Permits Plus but not assigned to a parcel in Septic Manager, environmental health staff will assign the permit to the parcel in Septic Manager. The permit number is an indication of the approximate (within 5 years) of the **age** of the system. Without a permit history the age of the septic system can only be surmised from assessor's data about the age of the house itself. At present the age of a septic system in Septic Manager is determined by the permit number prefix S or SW plus two numbers to indicate date, i.e. S58 = 1958 and SW06 = 2006. (SW prefix started in the year 2000.)
4. On site septic system summary reports are entered as inspections; this data includes the date of inspections, the business name, inspector's name, and overall status of the system (working satisfactorily, corrections needed, or failure). Additional data about the system is added in the tank and drainfield data fields in a narrative form with a limit of about three sentences. Hard copies of the reports are kept for six years.
5. Pump and service records are also entered; data includes date of pump service, name of company, pumper name, treatment plant septage hauled to and number of gallons. Hard copies of the reports are kept for one year. The pump service record is never considered an inspection report.

Additional information can be added in the database for each parcel including business name if the on site sewage system being serviced belongs to a Health Department licensee, associated parcels that may be serviced by the OSS, and there is a field for notes. Each parcel can also be "tagged" or labeled if necessary; examples include tagging a parcel as "failed", "vacant" or "abandoned". A "Notes" field is available. A picture of the Septic Manager database work site follows:

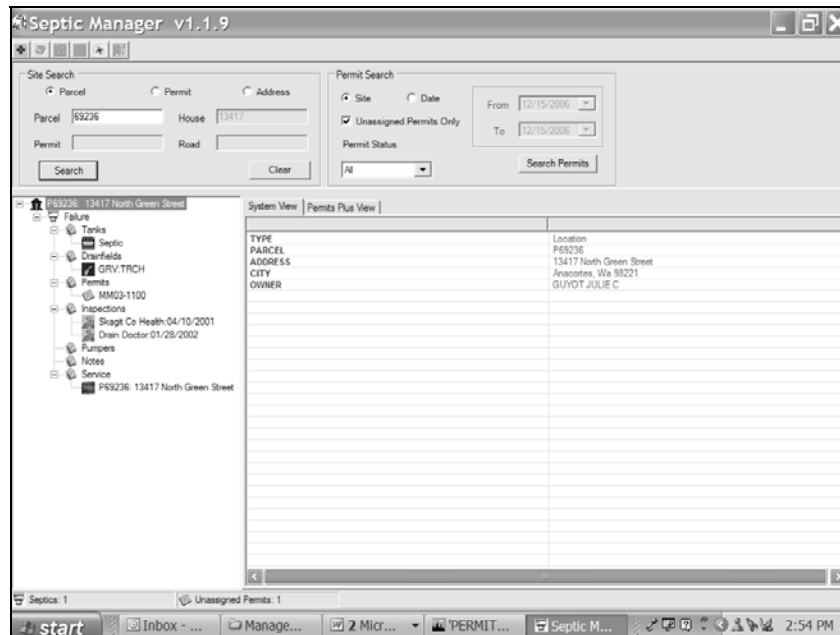


Figure 3 Septic Manager O&M database page

To report and use data, **data retrieval** currently uses a separate application from Septic Manager called “Make Data”. To make data, or retrieve a variety of data concerning septic systems the “Make Data” application enables the user to query Septic Manager for a variety of datasets. The data is then downloaded into an Excel spreadsheet, where the data is analyzed by sorting, cutting and pasting. It is limited and a tedious, laborious process at best when large numbers of parcels are concerned. The primary limitation of this query tool at present is that if a parcel is not “live” in Septic Manager (which means if there is no O&M data and or an OSS permit has not been assigned to the parcel in Septic Manger) then the parcel will not be retrieved during the query. Essentially these unretrievable parcels are all the unknown and often assumed parcels with on site sewage systems we need to target. Each parcel number currently has to be checked and cross-checked individually. The retrieved data in the Excel spreadsheet form creates a dataset for the integration and development of a map using a GIS program to indicate OSS O&M status in any targeted geographic location.

Mapping is currently a GIS tool called Skagit View, an Arc View GIS application. More information will be provided in Part 2 – Identification of Sensitive Areas.

Other features of Septic Manager currently include:

1. By clicking a map icon the location of the parcel can be viewed on the Skagit County iMap application;
2. By clicking a document icon an **as built** can be obtained for the parcel. The as built are also available to the public (including O&M providers) on line through the Skagit County website (skagitcounty.net).
3. By clicking the spreadsheet icon a spreadsheet can be made of a query search by Permit site, date, and status of permit.

The Future

An important element to database enhancement is how data is obtained. The Health Department has standardized the on site sewage system inspection procedure and the document used to report the inspection. The document is called the “On Site Sewage System Summary Report”. This form has been developed during the past seven years and is under review due to the introduction of the new Septic Manger Database, and the introduction of a training manual titled, *Residential Onsite Wastewater Treatment Systems: An Operation and Maintenance Service Provider Program*. The manual was developed by the Consortium of Institutes for Decentralized Wastewater Treatment. The manual is being used in order to improve the quality of the inspection itself by standardizing what and how components are checked, and to ultimately improve the quality of the data provided to the Health Department by the O&M providers. For additional information about how this will be accomplished see Part 5, Education.

An additional support staff position has recently been filled utilizing local Clean Water Program (Shellfish Protection District) dollars to review *Permits Plus* data and “scrub” the data. This will include reviewing archived data (including microfiche), verifying permit status, location (address and parcel number) and perhaps adding additional data to enhance reliability of *Permits Plus*. Starting in 2005 all on site sewage systems at time of final inspection by the Health Department are located using a global positioning (GPS) device. The information is stored in the base information of the septic permit in *Permits Plus*.

Concurrently Septic Manager will be enhanced in two ways: the way data is entered and the way data can be retrieved. The current plan is for the Septic Manger database to be enhanced with its own query building tools. The actual product is currently under development and is in beta test mode by environmental health staff. The plan is to integrate the query building tool into Septic Manager to enable the Health Department to query OSS on a basis of location, age and type. The “Make Data” query application will remain functional as well.

The short-term goal is to enhance the data entry capability. This will entail streamlining the data fields into a yes/no checklist format with a comments section. A longer-term goal will be for O&M providers to be able to enter data electronically on site or from their offices. Technology and skills will need to be developed, both internally and within the on site sewage industry. .

Additional fields will be added in the location data in Septic Manager. Latitude and longitude has been determined to be the most reliable source of a septic system’s **location**. These fields will be added in the current database enhancement project. A field or flag will be added to denote if the parcel is located in a **Marine Recovery Area**. The landmark that will be used to establish the longitude and latitude of an on site sewage system at a site is yet to be determined and will be established with the development of a policy. The policy will reference the WAC 246-272A requirement to have a record drawing of the installed system. For instance the record drawing will indicate where at the site the GPS coordinates were obtained. This should be at a major component of the system such as a septic tank, distribution box or established landmark from where all reference points are made.

Marine Recovery Area (MRA) on site sewage permit and O&M records will be completely compatible within Septic Manager. Parcels in Marine Recovery Areas with the database enhancements planned will be identifiable with a flag or tag in order to query the O&M status of the OSS in the specific MRA more closely.

The Future (2020) estimated (utopian) expectation of on site sewage system data in Skagit County (anticipated reconciliation of data).

Category	Source	Number
Assumed	Assessors	20,000
Assumed	Permits Plus Database	20,000
Known	Septic Manager Database	20,000
Unknown	Assessors minus Permits Plus (Site and type)	0
Unknown	Assessors minus Septic Manager (Operational status)	0
Known	Inspections reports in Septic Manager _(unduplicated)	20,000

Part 2 – Identification of Sensitive Areas

A. Description of the Jurisdictional Environment.

Skagit County is located in the northwest corner of Washington State bordered by San Juan County to the east, Snohomish County to the South, Whatcom County to the north and Okanogan and Chelan Counties to the east. The eastern portion of the county is mountainous with the North Cascades Mountains and foothills draining into the creeks and ultimately the Skagit River to form the Skagit Valley. The Skagit River is the major waterway bisecting the county's valley flowing toward the west and the marine waters of Puget Sound. The Skagit River Basin is defined as Water Resource Inventory Areas (WRIA) 3 and 4. The Skagit River is the second largest flowing river on the west coast of the US with an average summer flow of approximately 20,000 cubic feet per second on average, and greater than 100,000 during flood events. In addition to the Skagit River there are several other watersheds in Skagit County; the Samish River watershed (also in WRIA 3), and Colony and Oyster Creek drainages in the northwest corner of the county located in WRIA 1 flow into Samish Bay. WRIA 5 includes the Stillaguamish River (WRIA 5) watershed which is fed by the Pilchuck River and Lake Cavanaugh in Skagit County, and ultimately flows into the southwest corner of Skagit Bay in Snohomish County. See map on page 19 for WRIA details.

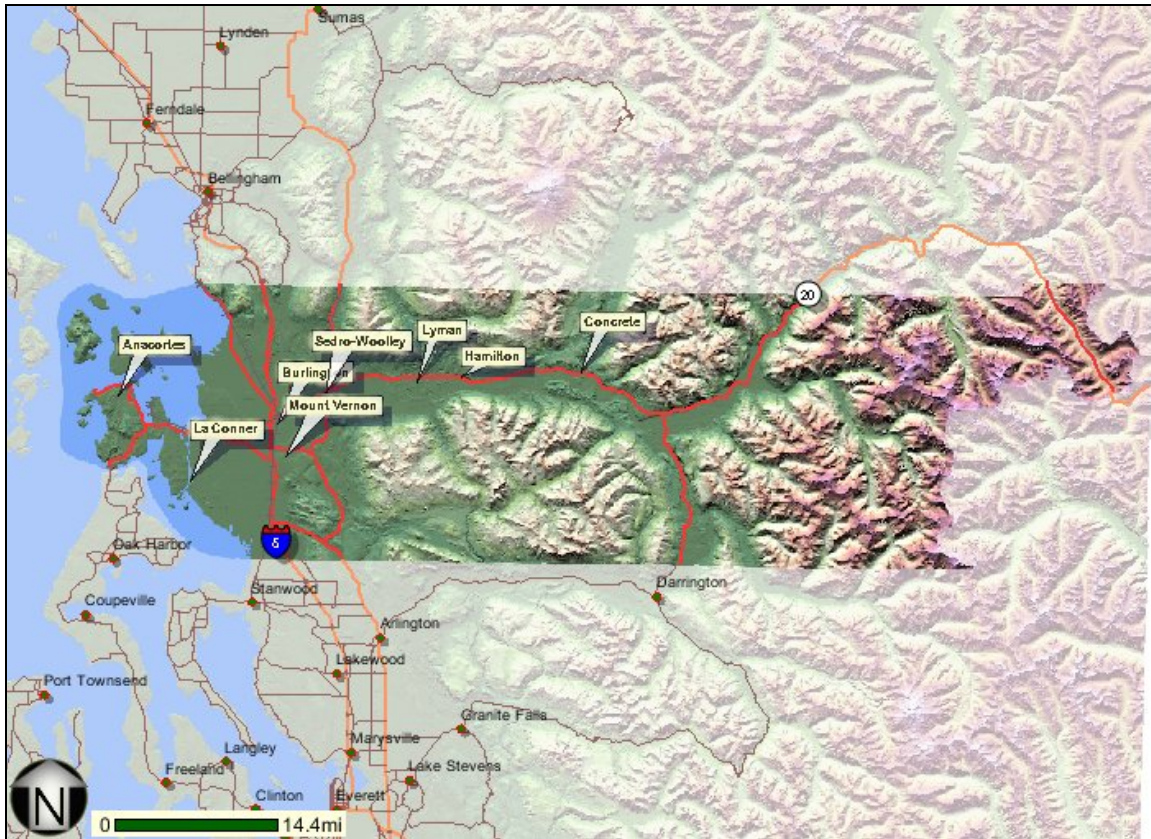


Figure 4 Skagit County with major towns

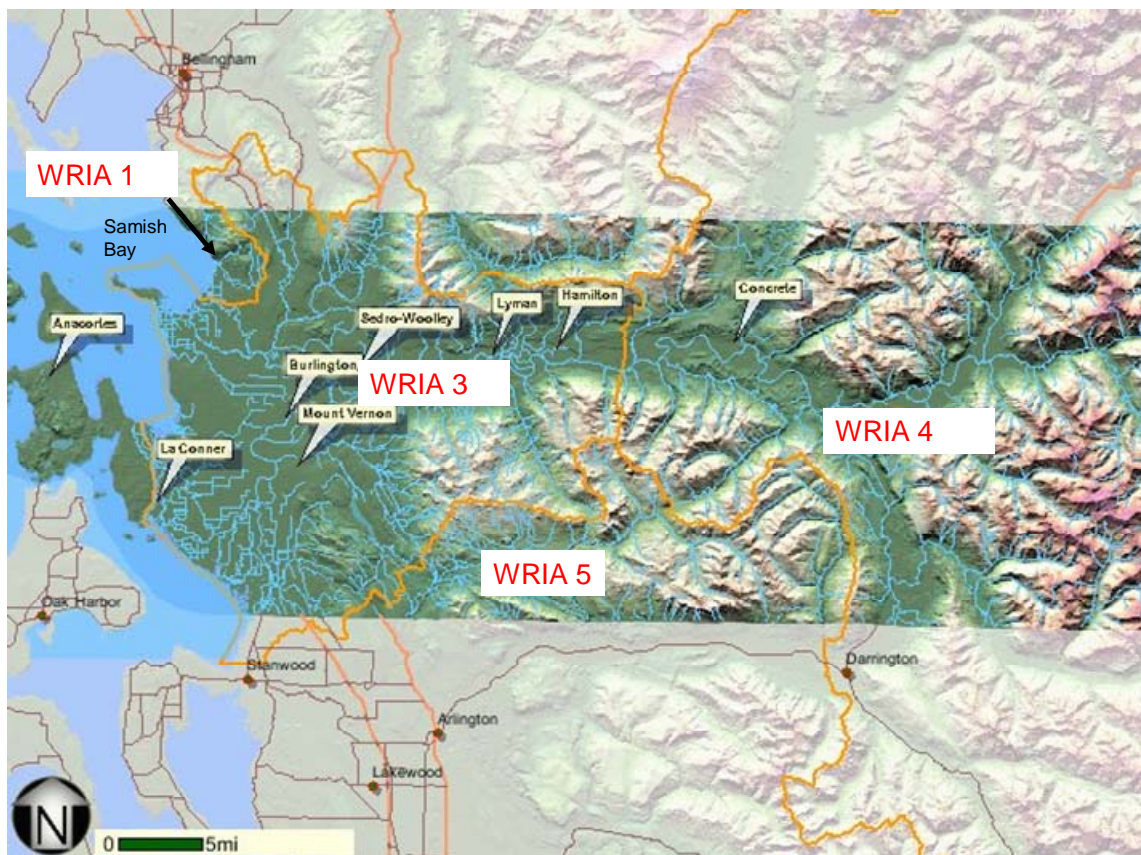


Figure 5 Skagit County Water Resource Inventory Areas

WRIA 1: Nooksack River, Oyster Creek, Colony Creek to Bellingham and Samish Bays.
WRIA 3: Lower Skagit River west of Grandy Creek to Skagit, Padilla, and Samish Bays
WRIA 4: Upper Skagit River east of Grandy Creek to North Cascades.
WRIA 5: Stillaguamish River including Lake Cavanaugh, Pilchuck Creek to South Skagit Bay

Skagit County' population in 2005 was 113,171 with estimated total housing units of 46,476 (42,319 occupied) with 28,068 in owner occupied homes. With a land area of 1,735 square miles there are 59.4 persons per square mile which makes Skagit County a rural county. In contrast the County Seat of Mount Vernon has a land area of 11 square miles with 2,360.6 persons per square mile.

As mentioned in the database section of the management plan of the 46,474 housing units approximately 20,000 (43%) treat wastewater with on site sewage systems. The average household size is 2.63 and average family size is 3.06. The median value for a home is \$219,300.00. The median family income is \$55,156 and per capita income at \$24,224. (Source: US Census Bureau, American FactFinder website.)

The major population centers are the incorporated municipalities of Anacortes, Burlington, Concrete, La Conner, Mount Vernon and Sedro Woolley. There are smaller unincorporated villages such as Bay View, Edison, Bow, Alger, Rockport, and Birdsvie to name a few. A distinct single Limited Area of More Intensive Rural Development (LAMIRD) exists with specific boundaries in the Similk Beach area. There are several Rural Villages throughout Skagit County, including Bay View and Alger. Also, there is one Area of Special Concern on the south side of Fidalgo Island in the Yokeko, Dewey Beach, Quiet Cove (YDQ) region on the shores of Skagit Bay and eastern entrance to Deception Pass.

There are approximately 214 miles of marine shoreline in Skagit County. In this area there are three islands in Skagit County with population pressures increasing with use of shoreline areas from summer only to full time residences. Oftentimes, a house remodel accompanies this change in use. They are Fidalgo Island which includes the City of Anacortes, Guemes Island north of Anacortes, and Samish Island which lies between Padilla and Samish Bays.

B. Designating Marine Recovery Areas, Sensitive Areas and determining their status

Introduction

Sensitive areas are defined WAC 246-272A as any area where an on site sewage system can pose an increased public health risk. Marine Recovery Area is defined in RCW 70.118A as "an area of definite boundaries where the local health officer, or the department in consultation with the health officer, determines that additional requirements for existing on-site sewage disposal systems may be necessary to reduce potential failing systems or minimize negative impacts of on-site sewage disposal systems." Though very similar, the purposes of these two regulations differ in that WAC 246-272A's primary purpose is to protect public health and RCW 70.118A's primary purpose is to protect shellfish growing areas and marine water quality.

Given the above, it remains up to the local health jurisdiction to administer these two Rules. Identification of sensitive areas and marine recovery areas are necessary in order to determine the level of potential public health risk posed by an on site sewage system, or more importantly a community of on site sewage systems. In addition, Skagit County will consider these criteria and designations in prioritizing work efforts.

Criteria for Determining MRA's and Sensitive Areas

The following criteria are to be used to determine and prioritize sensitive areas per WAC 246-272A:

Shellfish protection districts or shellfish growing areas. All of Skagit County is a Shellfish Protection District (or Clean Water District). ([Ordinance Number 200500014](#) – Appendix F). However focus will be on areas where shellfish closures have occurred or are threatened, including Samish Bay, Padilla Bay, Similk Bay, and Skagit Bay (see Marine Recovery Areas).

Sole source aquifers designated by the [U.S. EPA](#). Guemes Island is the only sole source aquifer in Skagit County designated by the U.S.EPA.

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. These are Critical Aquifer Recharge Areas as addressed in Skagit County's Critical Areas Ordinance.

Designated wellhead protection areas for Group A public water systems. See Appendix G map #1.

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. Skagit County has one public swimming beach east of Mount Vernon at Clear Lake. There are many other natural waters used as swimming areas, however, Clear Lake is the only one which has artificial boundaries.

Areas designated by the Ecology as special protection areas under WAC 173-200-090, Water quality standards for ground waters of the state of Washington. Currently, Skagit County has fecal coliform TMDL's in the Lower Skagit and Samish watersheds.

Wetland areas under production of crops for human consumption. None at this time.

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. See Appendix H map #2.

Areas where nitrogen has been identified as a contaminant of concern. None at this time.

Other areas designated by the local health officer such as Marine Recovery Areas.

Prototypes for MRA's and Sensitive Areas

In Skagit County, there are two specific areas that are prototypes for sensitive area designations. The first is the Similk Beach Limited Area of More Intensive Development (LAMIRD). This community of 85 homes was established as a LAMIRD so a community sewage system could be pursued following a commercial shellfish bed closure. The economic feasibility of a community sewer system proved an insurmountable hurdle, so Similk Beach residents agreed to a timeline for O&M inspections of systems and repairing failing systems. All systems are to be repaired by September 1, 2007 (Figure 10).

Additionally, the Area of Special Concern for the Yokeko Point, Dewey Beach, Quiet Cove (YDQ) area of Fidalgo Island as discussed in the Introduction serves as an example of a sensitive area designation. The YDQ Area of Special Concern boundaries were determined with cooperation of a community liaison group using some of the criteria listed below. These boundaries do not follow a watershed boundary, but are based primarily on higher densities of homes on small lots with poor soils.

Criteria used in establishing both the YDQ Area of Special Concern and Similk Beach LAMIRD will be considered in designating sensitive areas. They include:

1. Substantial redevelopment of homes from summer to full time residences and increased sizes of home;
2. Higher density where lot size is less than one acre;
3. Soil types and vertical separations require pretreatment before dispersal under current Rule;
4. The O&M statuses of existing on site sewage treatment systems are essentially unknown; and
5. Water (fresh or marine) quality monitoring data for fecal coliform or dissolved oxygen indicate impaired water quality.

Designation of Marine Recovery Areas and Sensitive Areas was presented and discussed at a Skagit County on-site sewage code Citizen's Advisory Committee. Reviewing the criteria listed in WAC 246-272A as well as the criteria used in designating the 'sensitive areas' of Similk Beach and YDQ and considering the current work Skagit County Health is doing in marine communities a shoreline approach was considered first. However Health Department staff concluded that upland areas that have on site sewage systems that could pose an increased public health risk, especially on island and shoreline areas where commercial shellfish beds are threatened will need to be included as well.

Marine Recovery Areas and Sensitive Areas Status Classification

Marine Recovery Areas and Sensitive Areas will be classified according to their recovery status. Areas currently with criteria indicating water quality degradation and commercial shellfish closures will remain in active recovery, threatened recovery or complete recovery status.

Active (Red): shellfish beds closed or threatened, water quality below standards and/or O&M data indicates less than 60% inspection rate;

Threatened (Yellow): water quality trends show improvement or deterioration, are still below standard, and/or O&M data inspection rate remains below 80%;

Complete (Green): water quality meets standards and requires ongoing monitoring, and O&M data indicates inspection rates remain current at 80% or greater.

Proposed Marine Recovery Areas, Criteria and Status

Samish Bay and Samish Island: This area meets several criteria as identified above, including:

- closed commercial shellfish growing areas,
- threatened status of shellfish growing areas as indicated by marine water quality trends identified in DOH's May 23, 2007 review of shellfish growing areas,
- water quality monitoring data from Ecology and Skagit County Public Works indicates degrading water quality;
- substantial redevelopment of shoreline properties,
- poor soils that require pretreatment components in OSS, and
- data indicating unknown OSS's and O&M status.
- Proposed present status: Active Recovery

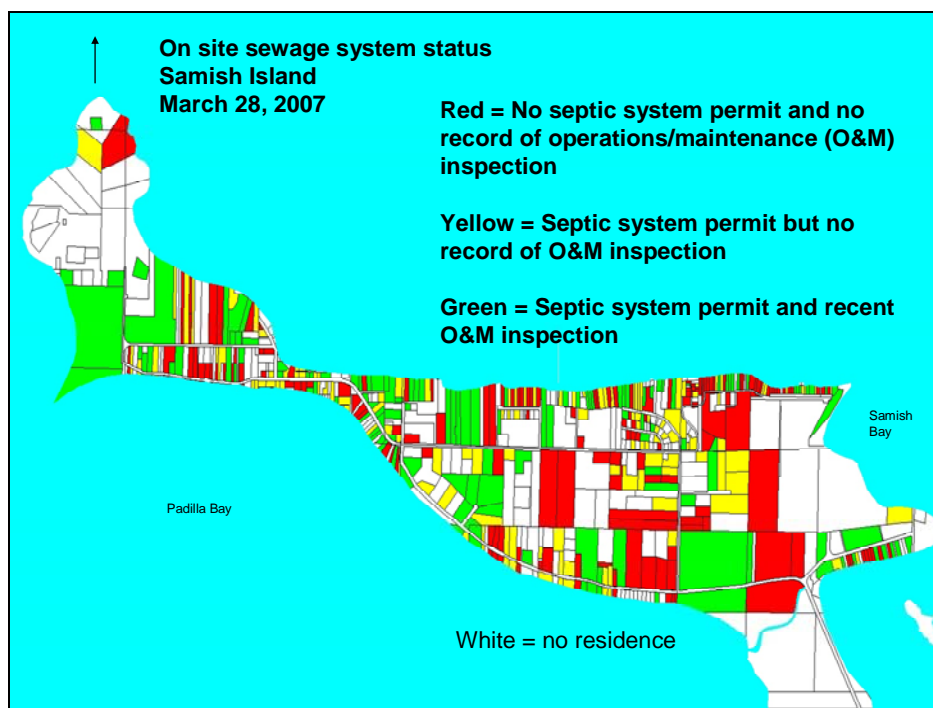


Figure 6 Samish Island O&M status

Similk Bay and Similk Beach community:

- commercial shellfish growing area closed due to public health hazard status,
- substantial redevelopment of shoreline properties,
- poor soils that require pretreatment components in OSS,
- extremely small platted lots,
- current enforcement of O&M and repairs in progress.
- Proposed present status: Active Recovery

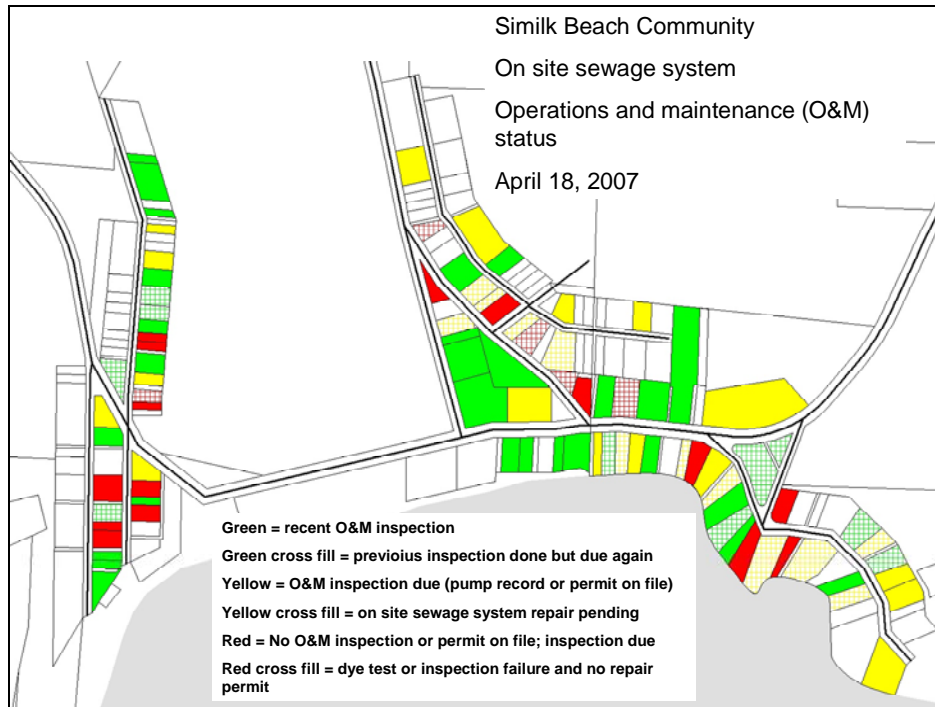


Figure 7 Similk Beach O&M status

Padilla Bay and Bay View rural village:

- recreational shellfish bed closed due to water quality impairment as evidenced by water quality monitoring data,
- poor soils that require pretreatment components in OSS;
- small lots in Rural Village zoned area; and
- data indicates unknown OSS's and O&M status.
- Proposed present status: Active Recovery

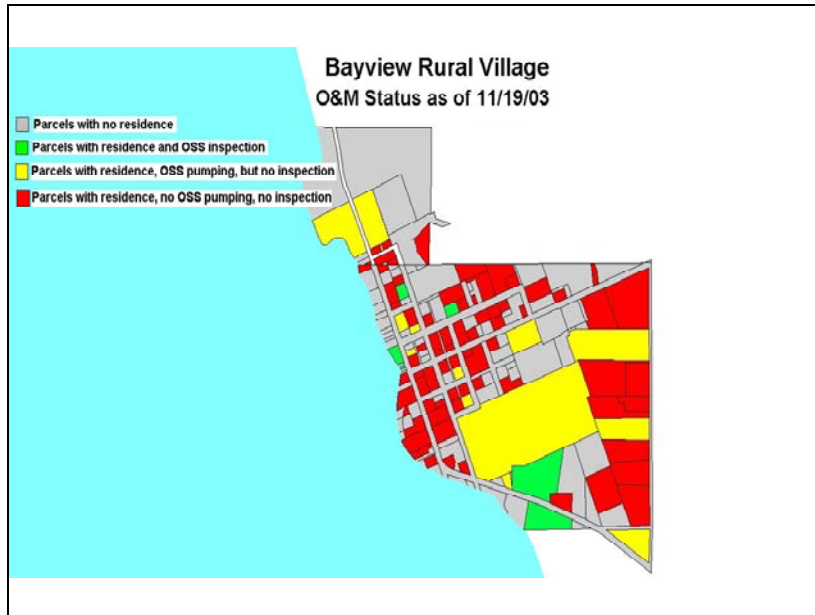


Figure 8 Bay View O&M status

Yokeko Point, Dewey Beach, Quiet Cove community; currently an Area of Special Concern).

- Substantial redevelopment
- Poor soils
- Present status: Threatened Recovery (Was Complete in spring of 2006)

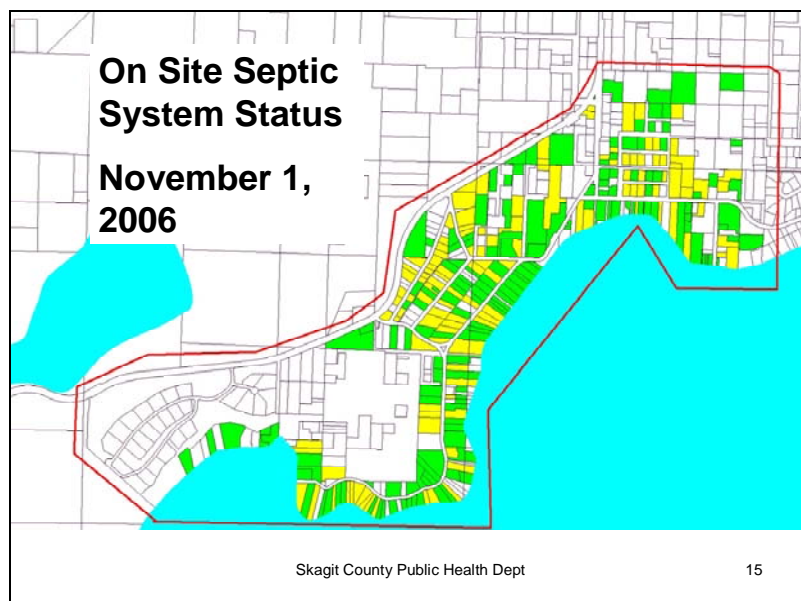


Figure 9 Yokeko, Dewey Beach, Quiet Cove O&M status

Guemes Island:

- Sole source aquifer with some areas of salt water intrusion,
- increased redevelopment along shoreline areas,
- recreational shellfish beds
- data indicate unknown OSS's and O&M status.
- Proposed present status: Active Recovery

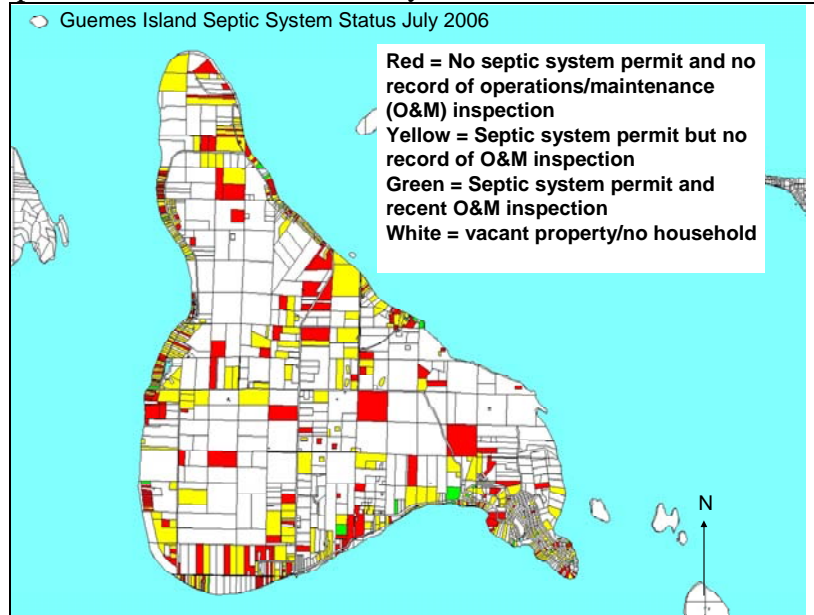


Figure 10 Guemes Island O&M status

Proposed Sensitive Areas, Criteria and Status

Lower Samish River Watershed

- closed commercial shellfish beds in Samish Bay,
- threatened status of shellfish beds as indicated by marine water quality trends as indicated by DOH's May 23, 2007 review of shellfish growing areas;
- water quality monitoring data from Skagit County and Washington Department of Ecology indicates high fecal coliform counts in some portions of Samish River and some tributaries flowing into Samish Bay (e.g. Thomas Creek, Edison Slough, Colony Creek),
- O&M data indicates high number of unknown OSSs.
- Several areas of higher density development (Blanchard, Allen).
- Proposed present status: Active Recovery

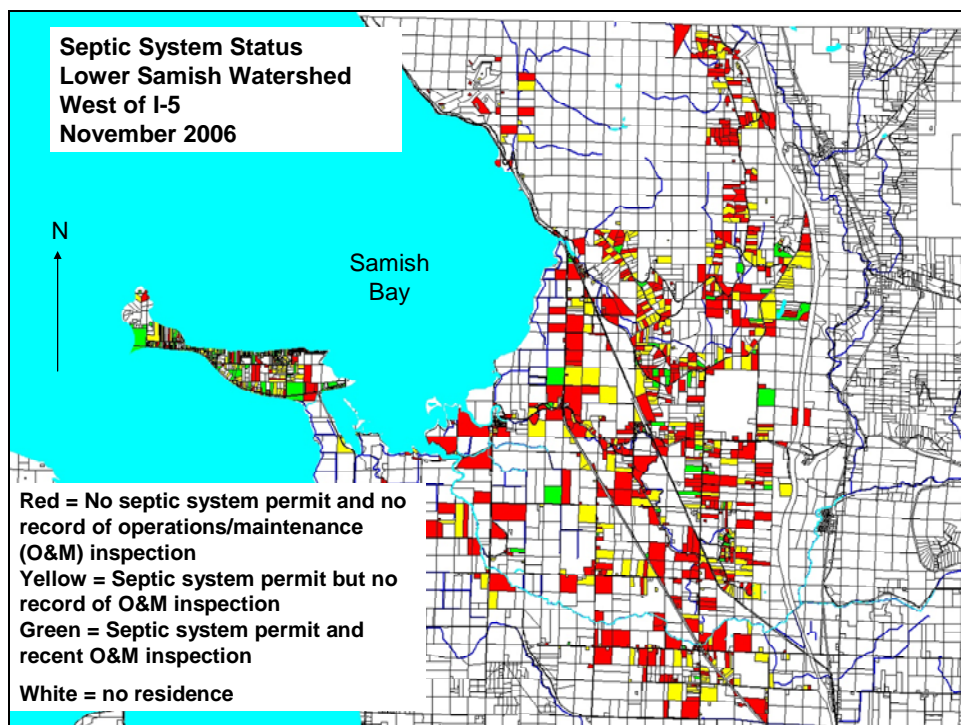


Figure 11 Lower Samish Watershed O&M status

Upper Samish River Watershed (Alger area):

- closed commercial shellfish beds in Samish Bay,
- threatened status of shellfish beds as indicated by marine water quality trends as indicated by DOH's May 23, 2007 review of shellfish growing areas ,
- water quality monitoring data from Skagit County and Washington Department of Ecology indicates high fecal coliform counts,
- O&M data indicates high number of unknown OSSs.
- Proposed present status: Active Recovery

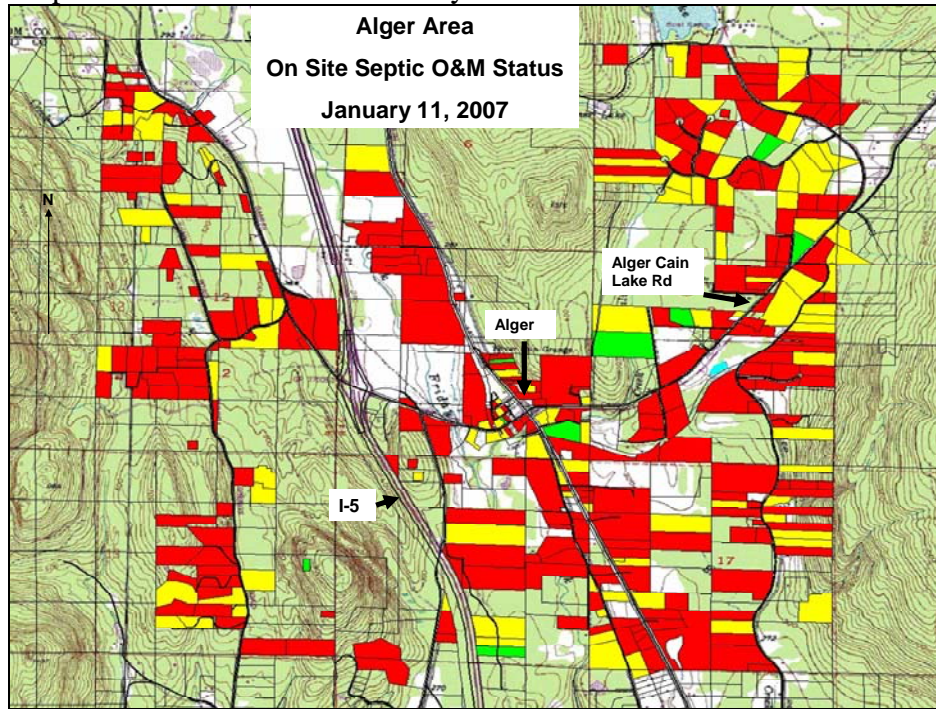


Figure 12 Upper Samish Watershed O&M status

Thomas Creek Watershed, a major tributary to the Samish River:

- closed commercial shellfish beds in Samish Bay,
- threatened status of shellfish beds as indicated by marine water quality trends as indicated by DOH's May 23, 2007;
- water quality monitoring data from Skagit County and Washington Department of Ecology indicates continuing high fecal coliform counts,
- O&M data indicates high number of unknown OSSs.
- Proposed present status: Active Recovery

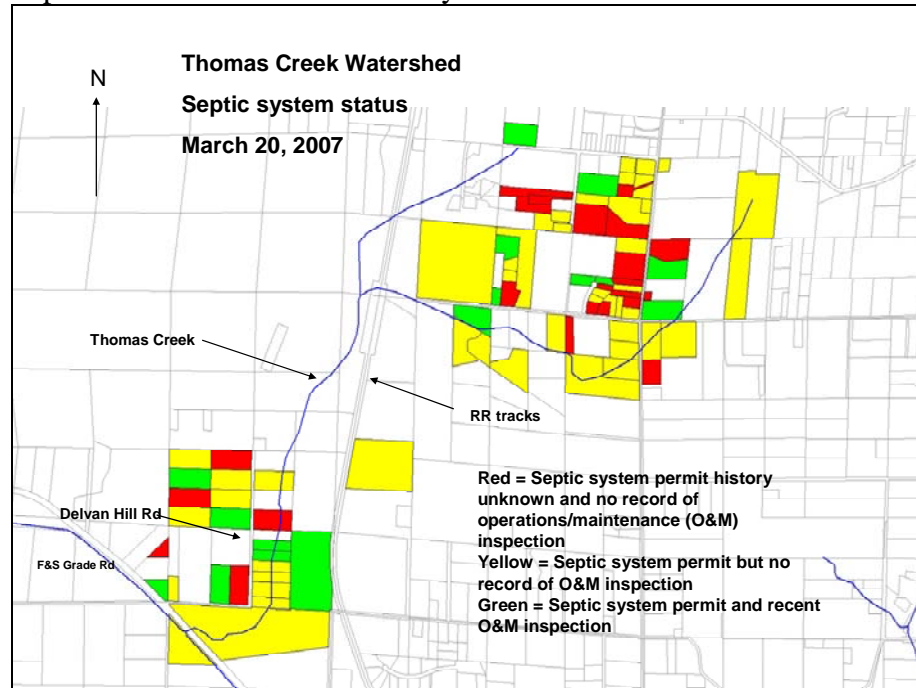


Figure 13 Thomas Creek O&M status

Nookachamps Creek Watershed:

- water quality monitoring data from Skagit County and Washington Department of Ecology indicates high fecal coliform counts,
- O&M data indicates high number of unknown OSSs,
- major tributary of Lower Skagit River Basin to Skagit Bay with TMDL plan in process.
- Proposed present status: Active Recovery

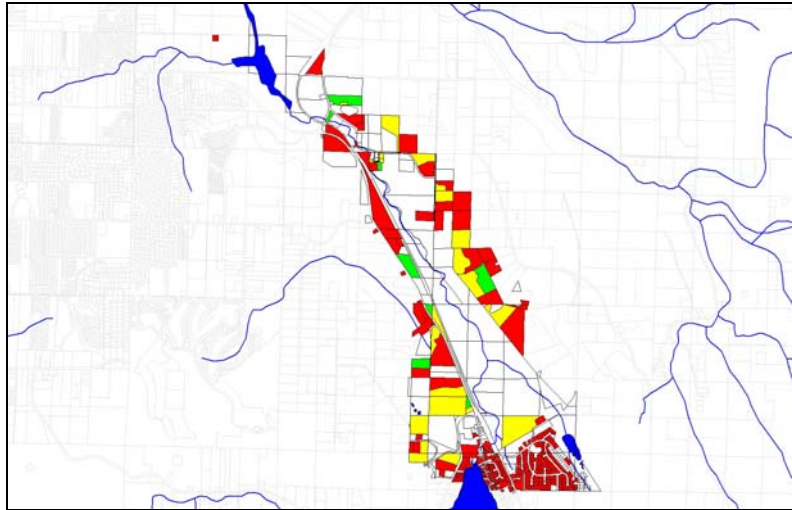


Figure 14 Nookachamps Watershed O&M status

In summary, Skagit County Public Health will designate marine recovery areas and those sensitive areas that have an impact on shellfish growing areas. Other marine recovery areas and sensitive areas may be designated as data is obtained and analyzed. Implementation of activities in these areas is dependent on funding and adequate resources.

C. Coordination with planning entities within the jurisdiction.

Planning Agencies in Skagit County

Skagit County Public Health is the health agency for all planning agencies, cities and County, in Skagit County.

Currently the Skagit County Public Health Department coordinates with the Skagit County Planning and Development Services (PDS) office in two ways: administratively and employee sharing. The Environmental Health Supervisor meets quarterly with the PDS Director and key staff. In addition the Health Department has two employees located in the PDS office to review water and on site sewage permits and co-ordinate the permit process with Health Department rules and regulations. When a land-use or development application is received by PDS, the application is routed to the Health Division of PDS if there are either drinking water or on-site sewage issues to be addressed.

The Health Department also has a hydrogeologist as a shared position in Public Works. If a development application shows on-site sewage systems may have an impact on an Aquifer Recharge Area, the County Hydrogeologist is consulted.

Coordination with City planning jurisdictions often occurs on an application-by-application basis. Currently, we have had contact with the City of Anacortes (which encompasses the highest amount of marine shorelines for a City in Skagit County) and other municipalities regarding on site sewage systems within City limits and the process by which these can get connected to municipal sewer. In addition, the City of Sedro Woolley has adopted an ordinance requiring operations and maintenance inspections for on site sewage systems within City limits. (City of Sedro Woolley, Chapter 13.12, section 10-50 and Chapter 13.08, sections 10-80. (Appendix H)

Coordination with Planning Agencies' Comprehensive Land Use Plans

Skagit County Planning and Development Services is just completing an update to the Comprehensive Plan. We have met with PDS to make them aware of Marine Recovery Areas and Sensitive Areas and the need to incorporate these land use designations into a Comprehensive Plan update. According to Planning and Development Services Skagit County, the next scheduled full update to the Comprehensive Plan is in 2012. Time wise this will align well with the on site sewage five year plan. The Health Department's on site sewage management plan will be incorporated into the Comprehensive Plan at that time.

There may be opportunity to incorporate Marine Recovery Areas sooner than the next scheduled full update to the Comprehensive Plan, by virtue of annual "outlying issues" updates, however, there is no guarantee that this issue can be included in those updates. Nevertheless, Skagit County Health Department plans to continue work in shoreline areas regarding on-site sewage disposal system operation and maintenance.

City planning departments route their Comprehensive Plans to the Skagit County for review and comment during the public comment process.

Enhancements to Coordination with Planning Agencies

By coordination with Planning and Development Services and the public process they must adhere to for revisions to Comprehensive Plans, the Marine Recovery Areas and sensitive areas will be incorporated into the County's Comprehensive Plan, Drainage Code, Critical Areas Ordinance, and the Shoreline Masters Program. Marine Recovery Area and Sensitive Area status reports can be submitted to planning agencies for their use in developing a Comprehensive Plan.

The Comprehensive Plan process is a long and tedious one. Skagit County proposes an outreach effort to property owners and communities affected by Marine Recovery Area and Sensitive Area designations. By working with communities up front, and building on the work we have done and are doing with shoreline and watershed areas, this community approach to designation of marine recovery areas and sensitive areas will help to remove barriers to getting the important work completed.

Outreach efforts will include City Planning Departments and local Tribes.

Shared Goals with Management Plan and Land Use Plans

Continued participation with land-use planning agency processes and discussions, together with building community support for Marine Recovery Areas and sensitive areas is critical to the success of this effort. In addition, land-use regulations require a consistency analysis. As we move through the Comprehensive Plan process to include Marine Recovery Areas and Sensitive Areas, this analysis will assure that goals are consistent. State agencies can also assist by communicating and coordinating with State land-use planning agencies.

D. State Environmental Policy Act (SEPA) Review

Because Skagit County Public Health is amending Skagit County Code 12.05, *On site sewage systems*, we intend to incorporate the proposed management plan into the SEPA review of the on site sewage code. The SEPA application for revision to SCC 12.05, and incorporation of the Management Plan, will be considered a non-project action. Submitting a SEPA checklist, and utilizing State DOH's checklist for approval of WAC 246-272A, *On site Sewage Rules*, the Health Department will determine if there are any significant adverse environmental impacts from the plan's "action".

Part 3 – Operation, Monitoring and Maintenance (O&M) in Sensitive Areas

A. Current O&M requirements common to all areas throughout the Skagit County.

Current O&M program requirements that apply to all OSS in Skagit County. Skagit County Public Health Department currently requires that anyone who provides O&M services must be certified by the Health Department. The certification requires annual renewal with continuing education requirements. There are two levels of O&M services: specialists who are qualified to inspect; and pumpers who are qualified to provide tank pumping and other services related to septic tank performance such as repair of an inlet baffle or installation of an outlet screen.

O&M service providers are required to submit reports to the Health Department within thirty days of service. O&M specialists submit an “On site septic system summary report” form which summarizes the results of an inspection, troubleshooting, monitoring and maintenance services. Pumpers submit a “Pump and Service Record” form to the Health Department for each tank pumped.

Each form requires the O&M provider to provide information about the property owner, address, phone number and parcel number. Details of the service are also summarized. When the completed forms are submitted to the Health Department they are entered into the Septic Manager database.

The O&M providers’ list is made available at all Septics 101 Clinics, at the Health Department counter, on line on the Skagit County website and provided in all mailings to targeted communities.

O&M inspections are now required at time of property transfer. This requirement became effective April 3, 2006 by [Resolution 20060056](#) (Appendix C).

O&M inspections are now required to be submitted to the Health Department on an annual basis for all Proprietary Treatment Products (PTPs). The Health Department adopted the Recommended Standards and Guidance for PTPs in February 2006 with Resolution 20060057.

Deficiencies in the current O&M program to be addressed. Current deficiencies include the capacity of the Health Department to notify the public of O&M requirements, and to enforce the O&M requirements. Also, the time-intensive effort to manually enter all report data into Septic Manager is a limitation. Both support staff and professional environmental health staff spend time entering data.

B. Sensitive area O&M requirements

Current O&M requirements for OSS within sensitive areas. Currently Skagit County has identified one sensitive area per WAC 246-272-21501, an Area of Special Concern in the Yokeko, Dewey Beach Quiet Cove area of south Fidalgo Island (see Figure 12). Inspections of septic systems are required once every three years for conventional gravity systems and once every year for all other systems with mechanical or electrical components.

Current program sufficiency to protect public health in sensitive areas designated in Part 2. The Health Department's O&M program is not adequate and sufficient to protect public health in areas that will be designated sensitive for the work efforts that are currently in place. Clean Water Program funding has allowed the addition of staff to meet some needs, however community outreach and education seems to have a snowball effect.

Additional staffing and resources will be required as this plan is implemented to expand the community efforts into other sensitive areas. Efficiencies in the utilization of staff time can be gained through electronic entering of O&M reports by O&M providers and other means, but it is anticipated that at additional FTE's will be required to facilitate community outreach and enforcement.

Operation, monitoring, and maintenance mitigation measures required within sensitive area that are not required in other areas. There will be no additional mitigation measures within sensitive areas at this time. All property owners will be required to have O&M inspections on their systems as stated in WAC 246-272A. Enforcement activities and fines will be more intensive in MRA's and sensitive areas. See enforcement activities.

Differing O&M requirements between types of sensitive areas. The O&M requirements in all sensitive areas will remain the same, but the fines/penalties may increase in MRA's and sensitive areas.

C. Enforcement Activities

Current methods to enforce the application, operation, monitoring, and maintenance requirements. -Current activities include enforcement of repair of failing systems, particularly in the YDQ Area of Special Concern, and the Similk Beach LAMIRD. Community efforts and cooperation in these areas over the course of several years have resulted in deadlines for all property owners in these areas to have O&M inspections completed on their systems and repairs made to failing systems. Similar community efforts have been launched in the Samish Bay watershed.

Additionally, complaint investigation and O&M reports marked 'failure' are followed-up by Health Department staff to verify failures and initiate enforcement action to effect repairs.

Finally, Health Department licensees are required to have annual O&M inspections prior to re-issuing the license to operate a food service establishment, mobile home park, camping vehicle park, or temporary worker housing.

Proposed methods to enforce the application, operation, monitoring, and maintenance requirements. Methods of enforcing O&M requirements were discussed with the Citizens' Advisory Committee. These proposals include both incentives and penalties:

Incentives:

1. An Operating Permit Fee or tax (of an amount yet to be determined) that becomes effective July 2010 for all on site sewage systems that have not had an inspection by then;
2. Currently the Health Department has a rebate program which offers \$100 for an inspection and \$100 for installation of a lid and riser. This program is due to expire in December 2008. It is uncertain this program will be able to continue after that date, though a funding source to continue a similar incentive program will be pursued.

Penalties:

1. To place a notice or hold in Permits Plus to prevent any future permit activity;
2. To place a notice on title to hold a property transfer until the inspection is done;
3. To issue citations for civil infraction and a required court appearance to property owners for failure to comply with the O&M inspection requirement;
4. To establish a fee schedule for penalties for failure to comply with the O&M requirement;
5. To double fines in Marine Recovery and Sensitive areas.

Proposed activities that can be implemented include:

1. Notification to all property owners of when an O&M inspection is due.
2. Verification of O&M inspection prior to obtaining a building permit.
3. Propose civil penalties into Skagit County Health Department Schedule of Charges.

Proposed Pollution Identification and Correction Program. In order to identify pollution sources as being from on site sewage, a pollution identification and correction (PIC) program will need to be planned and implemented. A PIC program will require additional staffing for field work to focus on where the sources of the sewage are from, and the follow-up needed to enforce the repair of the failure. Investigations will be data driven and involve focusing on areas where pollution is in all probability tracked to a human source either through microbial source tracking or other means of source tracking.

Additional resources will be required to enforce O&M inspections and to identify areas that have impaired water quality.

Evaluation of Enforcement Practices. Enforcement practices will be evaluated through data analysis, including:

1. The number of OSS that have been found, evaluated and repaired as necessary;
2. Measuring the time from when a failure is reported to the time a repair is made;
3. The number of O&M inspections completed in Marine Recovery Areas and Sensitive Areas;
4. Water quality analysis.

Part 4 – Marine Recovery Area Strategy

A. Marine Recovery area on site sewage system strategy.

The purpose of a marine recovery area strategy is to show how by July 1, 2012 the Health Department will:

1. Identify existing failing (or failed) systems and ensure they are repaired.
2. Find unknown systems and ensure they are inspected as required and are operational, working satisfactorily or acceptably, or repaired if necessary.

With the designation of a Marine Recovery Area and boundaries identified, parcels within those boundaries will be assessed for residences, and those residences will be assessed for living area. Those parcels with living areas or bedrooms will be surveyed electronically with the O&M database (Septic Manager) to determine their OSS permit and O&M status. Parcels with residences and living areas in marine recovery areas will (and are) categorized according to the following criteria and displayed on a map as similar to the description in the Septic System Improvement Grant description in the introduction:

Red means no permit on file and no O&M inspections on file.

Yellow means possibly a permit, pump service or overdue O&M

Green means a recent repair permit completed; or a recent O&M inspection (1-3 yrs).

With this data a mailing list will be developed, letters will be drafted to each category detailing their status and what actions they need to take, and then sent to each and every property owner within the boundaries of the MRA or sensitive area. Emphasis has been and will be placed on the properties with the “red” category due to their unknown status. The “yellow” category parcels will also receive a letter or a reminder that O&M is due. The “green” categories will only receive a notice that another O&M inspection is due when they flip to yellow.

The mailing will possibly include an announcement of a community meeting to provide information to the community about the marine recovery area, or Septics 101 Clinic if scheduled. In addition the mailing will include resources available to the homeowner to properly maintain their on site sewage disposal system. At this time, that includes a list of current O&M providers and a Rebate Program brochure (Septic Improvement Project -- contract expires December 2008). As additional grant or low-interest loan programs become available, this information will be updated..

The specific action each property owner is required to take first is to contact an O&M specialist and schedule the inspection. When the inspection is performed the O&M specialist completes the form, provides a copy to the property owner and sends the original to the Health Department within 30 days of the inspection.

B. Electronic data system of OSS with MRA

The actual inspection procedure in Skagit County has been developed in cooperation with the O&M providers and the Health Department. There are two formats for recording service at this time. A long form the O&M specialist fills out and keeps for their records; and a short form which the O&M specialist provides to the Health Department and their customer.

With the advent of the “Operation and Maintenance Service Provider Program” and the manual for “Residential On site Wastewater Treatment Systems” written by the Consortium of Institutes for Decentralized Wastewater Treatment, the Health Department has embraced the manual’s clear and detailed O&M inspection and reporting procedures. Over the next year or two details of the manual will be discussed and utilized as a resource and guide for O&M services and their providers. The Health Department hosts quarterly meetings with O&M specialists with agendas emphasizing the changes in technology, rules and regulations.

The O&M service providers are required to report to the Health Department all operational statuses of systems they inspect. The three categories are: working satisfactorily, corrections needed, and failure. With the inspection procedure as it is and under development failures are and will be found and reported to the Health Department on a timely basis. If necessary the Health Department will visit a site to verify the failure and assess the risk to public health.

Most often the O&M specialist is able to provide the information and resources to their customers about what they need to do when the system needs corrections or is a failure. If by the time the Health Department receives the O&M inspection report the property owner has not taken action to repair the failure, the Health Department will notify them as to what actions they need to take. Normally repairs need to be completed three months from notification unless a waiver is necessary due to extenuating circumstances.

The O&M providers submit reports to the Health Department every month. The reports are date stamped and entered into the Septic Manager database as received. The MRA data will be compatible with all other O&M data in the database in that Septic Manager will have a field to indicate if the parcel is within an MRA.

C. Skagit County Public Health required to contract with Washington State Department of Health

The Health Department is required according to RCW 70.118A.080 to enter into a contract with the Washington State Department of Health to implement plans and to develop or enhance electronic data systems. The contract will include state funding to assist the Health Department. The contract will require that within MRAs the Health Department will address activities (1 - 5 below) and describe the Health Department’s capacity and the estimated need (personnel, financial assistance, hardware and software) to meet the **goals below**.

1. Show progressive improvement in finding failing systems.
2. Show progressive improvement in working with OSS owners to make needed repairs.
(Resources include SRF water quality loans.)

3. Take steps to find previously unknown systems and ensure they are inspected as required and repaired as necessary.
4. Show progressive improvement in the percentage of OSS that is included in an electronic data system.
5. Show progressive improvement in the percentage of OSS that has had required inspections.

Skagit County Public Health Department began this process by virtue of the O&M program in 2000, and will continue as detailed in the plan for the next five years.

Part 5 – Education

Current education.

The Health Department's current education program has been in existence since September 2000. It is composed of several elements:

Septics Clinics: Over 90 provided to date with over 2,000 registered attendees to date (May 2007). These clinics have included Septics 101 for homeowners, realtors and food service establishments. The purpose of the classes is to provide information to homeowners about how septic systems work and how to take care of the. Septics 201 has been provided to teach homeowners how to do their own tank inspection.

“Keep Skagit Waters Clean” magazine: a 12 page tabloid information brochure for the general public discussing in an entertaining way how to care for your septic system.

Social marketing through advertising: Newspaper ads placed in local papers promoting Septics Clinics.

Bulk mailings to targeted communities: This is included in the tasks associated with the Septic System Improvement Project offering the rebates for inspections and installations of lids and risers.

Website includes Septic Clinics schedule, copy of “Keep Skagit Waters Clean” and links to the EPA, National Small Flows Clearing House, the WDOH and Skagit Conservation Education Alliance.

Planned Education

The Health Department plans to provide:

Additional Septics Clinics each month in each section of the County identified as a sensitive area or established as a Marine Recovery Area in order to reach out to communities and make the offerings more accessible. Special emphasis will be placed on targeted communities like Samish Island, the Samish River Watershed, Bay View, Similk Beach, Yokeko, Dewey Beach, and Quiet Cove. The Septic System Improvement Pilot Project contract which provides rebate incentives for inspections and upgrades continues until December 2008. In addition Septic 201 field classes will be provided based on demand to teach property owners how to check their own conventional gravity system.

Proprietary Treatment Product Educational Packets. With an emphasis in the O&M of proprietary treatment products (PTPs) an educational packet of information will be designed specifically for property owners with aerobic treatment units, packed bed filters and upflow gravel filters. This will be done in cooperation with the manufacturers' O&M recommendations. The packets will be provided to the homeowner after they move in and the system is operational.

Direct mailings to promote the Septic Clinics and Rebate program to individual property owners in sensitive and marine recovery areas.

Website Update and reorganization with information about the new rules and regulations, the resources for Septic Clinics, O&M providers, the rebate program and the loan program and any additional developments within this program.

Parcel specific information. Property owners will have easy access via the web for information about their own septic system. The idea is to link their parcel with specific O&M requirements for whatever system they have, and to possibly ensure they are aware of additional responsibilities if they are in a Marine Recovery Area or Sensitive Area.

Operations and Maintenance Providers' Education. The Health Department meets quarterly with the O&M providers in order to discuss administrative and technical issues related to on site sewage treatment. A major item on each meeting's agenda is education and discussion regarding the inspection and reporting procedure. The O&M program has embraced and is adopting over time a training manual titled ***Residential Onsite Wastewater Treatment Systems: An Operation and Maintenance Service Provider Program*** prepared by the Consortium of Institutes for Decentralized Wastewater Treatment. This manual has detailed descriptions of the O&M procedure for most public domain and proprietary on site sewage systems and their components, and includes the forms used to guide and document the inspection of the system. O&M providers have increased accountability for the work they do because of the new rules and regulations, closer public scrutiny, and the need to report an inspection and the data correctly. Inspection techniques, tests and tools used to accomplish the inspection procedure are part of the agenda of the O&M quarterly meetings. For additional details see the Future section of Part 1, Database Enhancement.

Current reminders

The Health Department at present has limited capability to remind and encourage property owners to complete the operations and maintenance inspections as required. Some of the O&M providers are providing their regular customers with reminders or have service contracts for proprietary products. With the Septic Manager database enhancement reminders will be a routine on a monthly basis.

Planned reminders. The Health Department's plan is to provide property owners with reminders of their O&M requirements. This capability is dependent on the O&M database (Septic Manager) enhancement. This project is currently underway and is planned to be fully operational by December 2007. The database will be able to distinguish systems by age, type and location and therefore allow the Health Department to target reminders to systems that pose a greater public health risk.

Measured effectiveness. O&M report volume is easily measured with present database capabilities and will remain so. For example, below is a table of unduplicated O&M inspections received during the period 2000 – December 2006.

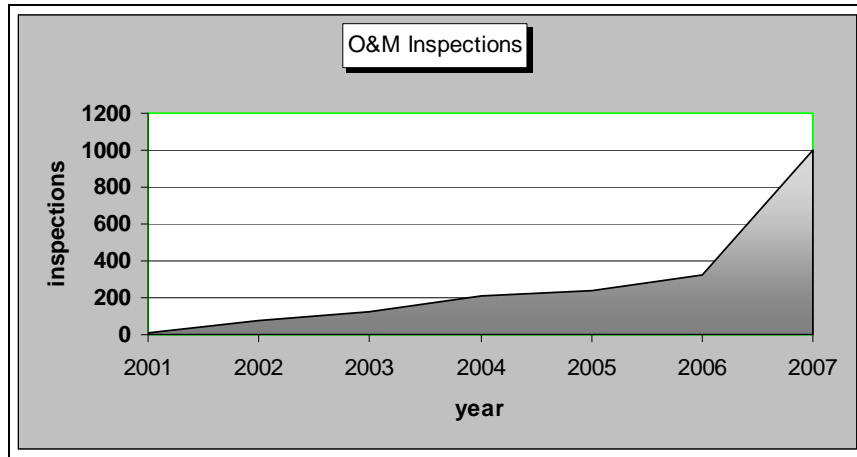


Figure 15 O&M inspections by year - unduplicated

Part 6 – Summary of Activities and Funding

Funding for implementation of the plan will include several sources: State dollars received through the Washington State Department of Health via chapter 70.118A RCW, local Clean Water Program Dollars, and permit fees received by Skagit County. The State dollars are currently approximately \$35,000 annually, but will continue to be available only on a biennium basis as approved by Washington State Legislature. Permit dollars can vary with permit activity, but average out to approximately \$175,000 - \$200,000 per year. Finally, Clean Water Program dollars which currently stand at approximately \$200,000 annually are specifically earmarked for on site sewage and monitoring and maintenance programs. These dollars became available in 2007 and will be reviewed on a regular basis for continuation by the Skagit County Commissioners.

In addition, low-interest loans and grants have been received and will continue to be sought to go directly to on-site sewage system repairs and maintenance.

Current expenses in the on site sewage and operations and maintenance program in Skagit County include 2 full-time Environmental Health Specialists whose duties are design approval, inspections and complaint follow-up, and 2 full-time Environmental Health Specialists in the operations and maintenance program. There are two part-time (the equivalent of one FTE) support staff dedicated to the on site sewage and operations and maintenance programs. These expenses are covered by Clean Water Program dollars and permit fees.

The following tables reflect current and planned activities. Resources have been identified as to estimated cost, whether the cost is a one-time or ongoing cost, and funding source. Because there is a 'mix' of dollars in this program, funding is not always directed categorically toward one activity or another, but a variety of funding sources may be used to achieve the program's overall goals.

It is anticipated that two new Environmental Health Specialist positions and an additional half time support staff position (an additional \$170,000 to \$180,000 annually) would be required to fully implement the plan. The pollution identification and correction program is not specific enough at this point to estimate the cost of implementation.

Funding Source abbreviations are defined as follows:

State dollars means Chapter RCW 70.118A, *Marine Recovery Area*, funding.

Local dollars means a mix of Clean Water Program dollars and permit fees.

Summary of Activities for Part 1 -- Database Enhancement

Activity	Timeline	Resources		
		Cost	Cost Type	Funding Source
Streamline Data Entry for Septic Manager	June 30, 2007	\$35,000	One-time	State dollars to contract with a computer programmer.
GIS mapping and additional enhancements to Septic Manager	July 2007 – June 2008	\$35,000	One-time	Same as above.
Maintenance of Septic Manager	June 2008 and beyond	\$15,000/yr	Ongoing	State dollars.
Tracking and Reporting: <ul style="list-style-type: none"> • PTP product components and systems. • Age and location of septic system. • Due date for next inspection. • Make & model of septic components. • System age. • System location. • System status. 	June 30, 2007	Current staff	Ongoing	Local dollars.
Ability to generate mailing lists	June 30, 2007	Included with tracking and reporting	Ongoing	Local dollars.
Data ‘scrubbing’ to assure accuracy. Normalize data from Permits Plus.	Part-time support staff hired May 16, 2007 (in addition to current support staff dedicating ½ time to on site).	Current staff	Ongoing	Local dollars.
Mapping <ul style="list-style-type: none"> • Record geophysical location 	July 1, 2007	Completed at time of inspection (Current	Ongoing	State and local dollars.

<ul style="list-style-type: none"> Establish GIS layer 	January 1, 2008	staff). Part of database enhancement	One-time & ongoing	State dollars.
Interface with Assessor's database <ul style="list-style-type: none"> Updates Septic Manager Updates Assessor's web site. 	July 1, 2007	Included in computer programmer funding.	Ongoing	State dollars.
Septic Manager Database populated with 20,000 known and operating OSS.	July 1, 2012	Included in support staff duties (EHS staff also spend time entering data).	Ongoing	State and local dollars.
Electronic entry of data by O/M providers. <ul style="list-style-type: none"> Research availability/work with Information Services. Develop and Implementation. 	January 2009 January 2010	Can be completed by current staff. ~\$75,000*	One time One time	State and local dollars. To be determined.

Summary of Activities for Part 2 -- Identification of Sensitive Areas

Activity	Timeline	Resource		
		Cost	Cost Type	Funding Source
Data analysis based on established criteria listed above.	July 1, 2007 (dependent upon database upgrade).	\$37,500/yr* (½ EHS FTE)	One-time and ongoing	State and local dollars
Establishing MRA and Sensitive Areas based on data analysis and public comment.	July 1, 2008	Included in cost above.	Ongoing	Local dollars
Education and Outreach to general public and stakeholders regarding Marine Recovery Areas. <ul style="list-style-type: none"> Introduction of these terms to current 'community' work areas 	July 1, 2007 January 1, 2007 (already underway)	Current staffing.	One-time	Local dollars

* New funding required to implement this activity.

(Similk, YDQ and Samish).				
<ul style="list-style-type: none"> Notification to O&M providers, on-site system designers, installers and citizens' groups. 	Underway			
<ul style="list-style-type: none"> Septics 101 classes. 	Underway			
<ul style="list-style-type: none"> Notices to property owners with OSS in marine recovery areas. 	Dependent upon database upgrade currently under way with a target by January 1, 2008.	Current staff	One time and ongoing	Local dollars
Outreach to local Tribes and Cities	July 1, 2007 to July 1, 2008	Current staff	One time and ongoing	Local dollars
Board of Health Adoption of Marine Recovery Areas and Sensitive Areas.	September 1, 2008	Current staff	One time	Local dollars
Incorporation into Comprehensive Plan	January 1, 2010	Current staff	One time; thereafter review every 5 years.	Local dollars

Summary of Activities for Part 3 –

Operation, Monitoring and Maintenance in Sensitive Areas

Activity	Timeline	Resource		
		Cost	Cost Type	Funding Source
Notification of O&M inspection requirements to property owners.	July 1, 2007 and ongoing.	Current staff	Ongoing	Local dollars
Notice in Permits Plus to hold building permit until O&M is complete.	July 1, 2007	Current staff	Ongoing	Local dollars
Determine civil penalties in Marine Recovery Areas and Sensitive Areas. <ul style="list-style-type: none"> Reconvene Citizens' Advisory Committee Revised Schedule of Charges 	July 1, 2008 September 1, 2008	Current staff	One time with periodic review	Local dollars
Enforcement of civil penalties	January 1, 2009	\$57,500/yr* (1/2 EHS FTE plus 1/2	Ongoing	To be determined.

		support staff)		
Pursue funding to continue 'septic improvement' efforts	January 1, 2009	Current staff	Ongoing	To be determined
Research feasibility of: <ul style="list-style-type: none"> O&M operating fee Placing notice on title 	January 1, 2009	Current staff	One time	Local dollars
Expand community outreach to all MRA's and Sensitive areas.	January 1, 2008	\$37,500/yr* (1/2 EHS FTE)	Ongoing	To be determined
Water quality analysis and evaluation of effectiveness of enforcement	January 1, 2010	\$37,500/yr* (1/2 EHS FTE)	Ongoing	To be determined
Pollution identification and correction: <ul style="list-style-type: none"> Coordination with Public Works & research feasibility Find funding Implementation 	July 1, 2008 July 1, 2009 July 1, 2012	Current Staff Current Staff Undetermined	One-time One-time Undetermined	Local dollars Local dollars To be determined