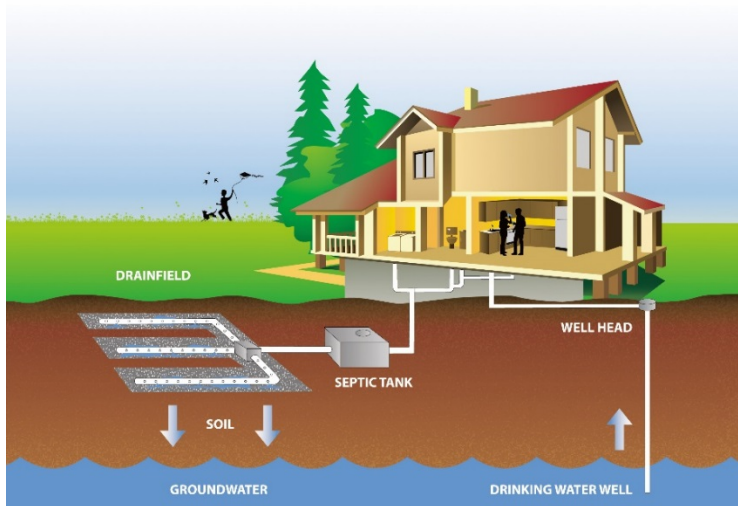


Thurston County On-Site Sewage Management Plan Update

Public Health and Social Services Department
Environmental Health Division



Final

Revised May 2016

Prepared by BH Consulting, LLC

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Reviser's Notes

This May 2016 revision of the Thurston County On-site Sewage System Management Plan includes a Tiered Charge Alternative. The Thurston County Board of Health directed Environmental Health staff to develop a tiered alternative that helps assure charges are commensurate with the services provided. The tiered alternative is summarized in the Executive Summary and described in more detail in Part 5 - Funding Strategy.

Part 1- OSS Electronic Data Systems, and Part 2 – OSS Operation and Maintenance were revised to show the results of the inventory of septic systems completed in 2015. Environmental Health worked with the Thurston County Geo-Data Center to identify properties served by on-site sewage systems. We now know there are approximately 53,000 septic systems in Thurston County, not 70,000 as indicated in the original draft of this plan.

Part 3 - OSS Management Areas was updated to reflect completion of the *On--Site Sewage Management in the Scatter Creek Aquifer* project in 2014. The Thurston County Board of Health adopted Resolution H-3-2014 accepting the recommendations of the citizen advisory committee. The resolution and recommendations are included as Appendix C.

Acknowledgements

This update to Thurston County's On-site Sewage Management Plan has been a collaborative effort of citizen volunteers and professional stakeholders who have given of their time to attend committee meetings and provide direction to the Board of Health. Their participation is much appreciated.

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Dan Smith	City	City of Tumwater
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 Advisory Committee

Executive Summary

The Washington State Board of Health adopted Chapter 246-272A WAC in July 2005 requiring all Puget Sound counties to develop a management plan for on-site sewage systems (OSS) within their boundaries. In 2006 the Legislature enacted Revised Code of Washington (RCW) 70.118A which requires counties bordering Puget Sound to designate Marine Recovery Areas (MRAs) where OSS contribute to marine water quality degradation due to fecal coliform contamination, low-dissolved oxygen levels or nitrogen as a contaminant of concern. Management strategies must be developed to find and repair existing failing OSS as well as to inventory all OSS and ensure routine inspections.

Thurston County met the requirements of the legislation and adopted the *Thurston County Public Health and Social Services Department, Environmental Health Division On-Site Sewage System Management Plan* on January 7, 2008. The plan with its recommendations was the work of an advisory committee that met from November 2006 to September 2007.

This plan is an update to the 2008 plan, and its recommendations are also a product of an advisory committee that met from November 2013 to July 2014. Six years have passed since the 2008 plan was adopted, and much work has been done. New water quality studies have been undertaken and their results provide data as to what actions are now needed. Data has been gathered and analyzed to evaluate the effectiveness of the changes since 2008 – and any deficiencies that remain.

2014 Recommendations

The 2014 Thurston County OSS Management Plan Advisory Committee has recommended to the Thurston County Board of Health that the following actions be taken to update the County's On-Site Sewage Management Plan in order to meet the current challenges of on-site septic system management in Thurston County.

Regulation Changes

RECOMMENDATION: Communicate concern to Washington State Department of Labor & Industry, who establishes electrical regulations, that a solution be found to the issue of electrical components corrosion associated with OSS.

O&M Program and Database Enhancements

RECOMMENDATION: Expand the use of on-line services:

- Enable electronic submittal of certified homeowner inspection reports and applications for time of transfer (when property is sold or otherwise transferred from one owner to another).
- Establish a method to enable
 - the public to submit permit applications and make payments electronically, and
 - the public and county staff to complete and submit inspection reports electronically.
- Automate transfer of OSS quarterly sample results from OnlineRME to the county system.

The recommended timeframe for implementation of this task is end of 2017.

RECOMMENDATION: Continue to complete the countywide OSS inventory and GIS (Geographic Information Systems) map layer that will establish a unique identifier for OSS that is not dependent upon tax parcel numbers and preserves the OSS history.

RECOMMENDATION: Require all OSS inspections be submitted electronically by 12/2017.

RECOMMENDATION: Send notices to remind owners of gravity and pressure distribution OSS, who are not within the county's designated MRAs, that routine inspection and maintenance needs of the system should be done.

RECOMMENDATION: The OSS program shall require that ...

- all OSS owners be routinely notified of the need to inspect their system,
- system component deficiencies be corrected at time of property transfer, and
- septic design information for every OSS in the county be on OnlineRME.

RECOMMENDATION: The OSS Management Plan shall be reviewed at a minimum every three years to begin in 2018 and amended as needed.

Identification of Marine Recovery Areas and Sensitive Areas

RECOMMENDATION: Eld Inlet and its watershed shall be designated as a Marine Recovery Area as soon as possible. Henderson and Nisqually Reach are currently Marine Recovery Areas; each has an enhanced O&M program for OSS within their boundaries. The documented marine water quality decline in Eld in the years since the inlet was reopened to shellfish harvest in 1998 is evidence that the area needs a program like Henderson and Nisqually to prevent water quality deterioration.

RECOMMENDATION: Totten Inlet and Budd / Deschutes shall be considered by the recommended Sensitive Area Workgroup as possible Marine Recovery Areas.

RECOMMENDATION: Summit Lake, which is used by most residents for their drinking water source, shall be designated as a Sensitive Area. All wastewater disposal systems in the Summit Lake watershed shall have required operational certificates and dye testing to assure that routine inspections and maintenance is completed at least every three years and failing systems are identified and repaired.

RECOMMENDATION: Form a Sensitive Areas Workgroup who will refine the criteria used to identify sensitive areas and apply the criteria to identify what should be designated as sensitive areas. Staff and resources may be needed to investigate problem areas, perform field evaluations and gather data to assist the workgroup with their task.

RECOMMENDATION: The Sensitive Areas Workgroup (SAW) shall evaluate OSS-specific recommendations from the Budd Inlet/Deschutes River TMDL, Scatter Creek Aquifer, Urban Septic Assessment projects using the criteria they adopt. The SAW, as appropriate, will recommend sensitive areas and requirements to be included in plan amendments. [These three projects are underway with their own designated stakeholder

committees and work groups, but will not be complete until after the work of the OSS Management Plan advisory committee is complete.]

Education

RECOMMENDATION: The department shall have an education program that reaches a wide variety of audiences, including on-site industry professionals, the real estate community, OSS owners, the public and other affected parties, especially when there are changes in regulations, permitting, county processes and OSS technology. The department shall find opportunities to collaborate with on-site industry professionals, while being careful to keep the lines between the regulatory agency and the industry clear.

RECOMMENDATION: The Environmental Health website shall be updated to make the OSS information easier to find and use.

RECOMMENDATION: Given the success of the intensive training OSS owner workshops for Henderson and Nisqually Reach MRAs, Environmental Health shall explore and implement training options for all OSS owners in the county.

Financing

RECOMMENDATION: The committee recommends charging a single flat fee to all OSS owners throughout the county to provide stable funding to the department for an O&M (Operations and Maintenance) program countywide and management of special areas, current and future. The recommended fee would replace the current O&M fees, pump report fees, Time of Transfer application fees and shellfish protection district charges with designated Marine Recovery Areas. The committee recommends an additional charge for multiple OSS per parcel (no cap; amount to be determined) and a 50% rate reduction for those in the senior/disabled tax exemption program.

ALTERNATIVE RECOMMENDATION: The Thurston County Board of Health directed Environmental Health staff to develop a tiered alternative that helps assure charges are commensurate with the services provided. This is the Board of Health's preferred alternative to the Advisory Committee's recommended flat fee. This three tier alternative bases charges on the geographic location of the septic system and the work the health department anticipates will be needed to implement the Plan. This structure charges the highest amount for septic systems in Watershed Protection, Marine Recovery, or other special areas designated by the Board of Health, an intermediate amount for septic systems in Puget Sound watersheds outside of special areas, and a lower amount for septic systems in the Chehalis watershed, also outside any special areas. The charges would replace the fees and charges currently charged to renew operational certificates, receive and process pump report, Time of Transfer applications, and shellfish protection district charges within the designated Marine Recovery Areas. There would be an additional charge for multiple OSS per parcel (no cap; amount to be determined) and a 50% rate reduction for those in the senior/disabled tax exemption program.

RECOMMENDATION: Staff participation in the DOH OSS Management Plan Funding project shall remain a priority for Environmental Health.

Performance Measurement

RECOMMENDATION: Implement a robust program of quality assurance / quality control (QA/QC) on a representative sample of inspections submitted by OSS owners and professionals. Prioritize those areas of the county where inspection accuracy is most important for protection of public health and water quality.

RECOMMENDATION: Give the SAW the task of developing a system of measurements in order to report on program progress as well as to assist with adaptive management of the program.

Implementation Plan

Implementation of the On-Site Sewage Management Plan Update is recommended as follows:

- Phase 1: Work with the Board of Health to adopt the legal framework and funding mechanism to implement this plan countywide.
- Phase 2: The Department and other responsible parties shall continue and take advantage of opportunities to make incremental progress to fully implement the recommendations in this updated plan.

Introduction

Regulations

The Washington State Board of Health adopted Chapter 246-272A WAC in July 2005, requiring all Puget Sound counties to develop a management plan for on-site sewage systems (OSS) within their boundaries. In 2006 the Legislature enacted Revised Code of Washington (RCW) 70.118A which requires counties bordering Puget Sound to designate Marine Recovery Areas (MRAs) where OSS contribute to marine water quality degradation. Management strategies must be developed to find and repair existing failing OSS as well as to inventory all OSS and ensure routine inspections. The Washington Department of Health published guidance documents in 2006 to facilitate compliance with these regulations. The following is a synopsis of these regulations and guidance documents. (See Appendix A for regulations.)

RCW 70.118A.030 requires that the twelve Puget Sound counties “develop a written on-site program management plan to provide guidance to the local health jurisdiction.” The plan must:

- Propose an MRA for areas where existing on-site sewage disposal systems are a significant factor contributing to concerns associated with:
 - Shellfish growing areas that have been threatened or downgraded;
 - Marine waters that are listed under section 303(d) of the federal Clean Water Act for low-dissolved oxygen or fecal coliform; or
 - Marine waters where nitrogen has been identified as a contaminant of concern by the local health officer.
- Find existing failing systems and ensure that system owners make necessary repairs, and
- Find unknown systems and ensure that they are inspected and functioning properly, and repaired if necessary.

WAC 246-272A-0015 requires health officers of the 12 Puget Sound local health jurisdictions, including Thurston County, to develop an On-Site Sewage System Management Plan for the development and management of OSS. The plan must specify how Thurston County will:

- Progressively develop and maintain an inventory of all known OSS in operation within the jurisdiction;
- Identify areas where OSS could pose an increased public health risk, such as
 - Shellfish protection districts or shellfish growing areas;
 - Sole source aquifers or areas that are critically impacted by recharge;
 - Designated wellhead protection areas for Group A public water systems;
 - Areas where nitrogen has been identified as a contaminant of concern; and
 - Other areas designated by the local health officer.
- Identify the operation and maintenance requirements for OSS commensurate with their public health risks;
- Facilitate education of homeowners regarding their responsibilities to monitor and maintain their OSS;
- Remind and encourage homeowners to complete and document the operation and maintenance inspections required by state law;
- Enforce OSS owner permit application, operation, monitoring and maintenance and failure repair requirements of state law;
- Describe the capacity of the local health jurisdiction to adequately fund the OSS plan; and

- Assure the management plan was developed to coordinate with the comprehensive land use plans of the entities governing development in the health officer's jurisdiction.

WAC 246-272A-0270 outlines OSS owner responsibilities to operate, monitor and maintain the OSS to minimize risk of failure. The OSS owner must do the following:

- Operate and maintain OSS as directed by the local health officer;
- Obtain approval before repairing, altering or expanding the OSS;
- Renew required maintenance contracts;
- Renew required operational certificates;
- Inspect gravity OSS every three years;
- Inspect all other OSS annually;
- Pump tank(s) when necessary;
- Complete maintenance and needed repairs; and
- Provide OSS maintenance records at time of property transfer.

In June 2006, Washington Department of Health published On-Site Sewage System Management Plan Guidance for the Twelve Puget Sound Counties. The guidance document suggested a plan outline and listed six elements for inclusion in an OSS Management Plan:

- Database enhancement
- Sensitive Areas
- O&M in Sensitive Areas
- Marine Recovery Areas
- Education
- Implementation

Working with an advisory committee, Thurston County developed and adopted an On-Site Sewage Management Plan in January 2008. Thurston County's 2008 OSS Management Plan included the following eight elements:

- Regulation Changes
- Electronic Database Enhancement
- Identification of Sensitive Areas and Marine Recovery Areas
- Education
- Quality Assurance and Enforcement
- Funding Strategy
- Performance Measurement
- Implementation Strategy

Now six years later, the Plan has been updated to reflect current conditions and needs. The document that follows is the ***Thurston County On-Site Sewage Management Plan 2014 Update***. This Update includes all previous elements though the order has been changed and some elements have been combined for ease of reading and implementation.

- OSS Electronic Database Systems
- OSS Operation and Maintenance
- OSS Management Areas: Marine Recovery Areas, Sensitive Areas, Urban Conversion Areas
- OSS Education
- Funding Strategy
- Plan Implementation

Process

For development of this Update an advisory committee was selected that included citizen volunteers, county staff as well as on-site industry professionals. (Members are listed in the Acknowledgements.) Environmental Health management and staff provided guidance and technical information to the committee, and staff from Washington State Department of Health, City of Olympia and Thurston County gave presentations to the committee to report technical information as well as current status of pertinent water quality issues impacted by on-site sewage systems. The advisory committee began meeting in November 2013. The focus for each meeting's agenda was as follows:

- November 2013 Introduction to committee process and status report of 2008 Plan recommendations
- December 2013 Staff presentations about septic system design and permitting, plus county's program for on-going septic system operation and maintenance
- January 2014 Surface Water - Water Quality Issues: Fresh and Marine Water
- February 2014 Groundwater Issues: Overview, Drinking Water, Scatter Creek Study Work
- March 2014 Evaluation and Current Status of County's Septic O&M Program
- April 2014 Urban Conversion of Septics to Sewer and Funding Strategies
- June 2014 Funding Strategy and Review Draft Plan with Recommendations
- July 2014 Final approval of Plan Recommendations

Vision Statement

The first order of business for the advisory committee was to determine what the purpose of their work was to be. The members determined that while the plan needs to satisfy the requirements of state law, it also needs to meet the needs of the citizens of Thurston County. The programs and proposals need to make sense, be reasonable to the public and meet public health goals. The following vision / goal statement guided the advisory committee as they worked on the 2014 On-Site Sewage Management Plan Update:

“Our goal is to protect public health in Thurston County by assuring that on-site sewage systems are properly designed, permitted, built, operated, and maintained or abandoned. As we update the OSS Management Plan, we will strive to accomplish this goal by evaluating the effectiveness of current programs and study findings, complying with requirements of state regulations and meeting the needs of the citizens of Thurston County.”

Review 2008 Plan

The committee next reviewed the recommendations from the 2008 plan. A 6-page report summarizing the current status of the 2008 recommendations was presented. (See Appendix B) The report concluded that many of the 2008 recommendations had been completed. Those that had not been implemented would be re-evaluated using current information and discussed to formulate recommendations for the updated plan.

Committee Work

The committee met monthly to learn what work had been done since 2008, the current status of the various elements and what new issues have arisen. Reports and presentations were followed by group discussion. Preliminary recommendations were documented at the close of each meeting when possible. When all presentations and discussions were completed, a plan report was drafted and reviewed by the committee. Recommendations were finalized. In some instances, the committee members stated that they lacked the needed expertise to make a recommendation.

Report Format

The format for this 2014 Update Plan report is divided into six parts:

- OSS Electronic Database Systems
- OSS Operation and Maintenance
- OSS Management Areas: Marine Recovery Areas, Sensitive Areas, Urban Conversion Areas
- OSS Education
- Funding Strategy
- Plan Implementation

Each part of the plan is prefaced with the requirements of state law, followed by:

- Current Status of 2008 Plan Recommendations
- Committee Review
- What Needs Attention
- 2014 Recommendations

Thurston County Public Health Responsibilities

Thurston County Environmental Health Division has the responsibility to manage an estimated 53,000 on-site sewage systems. Strategies to manage OSS in MRAs and other areas that pose the greatest public health risk must coordinate with programs for OSS in the remainder of the county. To meet these responsibilities

Thurston County Environmental Health must:

- Protect the public's health from disease caused by improper siting, construction, operation and maintenance, failure or abandonment of OSS.
- Uphold state law that regulates OSS siting, design, permitting, building, operation, maintenance and abandonment.
- Determine what specific public health and water quality risks the county has from OSS and adopt Sanitary Code regulations that will manage those risks.
- Develop an OSS program that is effective, fair and as efficient as possible so that staff can focus their expertise and efforts on proper siting, design, permitting and installation, as well as working with owners of existing OSS that have operation and maintenance issues.
- Communicate and coordinate with state agencies and local jurisdictions on wastewater issues that affect and impact the citizens of Thurston County.
- Maintain a working relationship and meet regularly with septic professionals to clarify new requirements, listen to concerns and resolve problems.
- Provide OSS owners (current and prospective) with information and education opportunities of how to properly operate and maintain their OSS in order to meet their legal responsibility, extend the life of their OSS, protect the health of the community and protect their investment.
- Confirm that at time of property transfer, the OSS has been inspected.
- Adapt to new information about OSS systems, community wastewater issues, water quality issues and coordination opportunities.
- Implement a funding strategy that supports a comprehensive OSS program that meets the primary goal of the Health Department to protect the public health and the Thurston Thrives Environment strategy to keep water clean and restore water resources.



Part 1 – OSS Electronic Database Systems

STATE REGULATIONS

WAC 246-272A-0015 requires jurisdictions to develop and maintain an electronic inventory of all on-site sewage systems to:

- Progressively develop and maintain an inventory of all known OSS in operation within the jurisdiction, and
- Maintain records required [under Chapter 246-272A WAC], including all operation and maintenance activities as identified.

RCW 70.118A.060: In a marine recovery area, each local health officer shall:

- Require that on-site sewage disposal system maintenance specialists, septic tank pumpers, or others performing on-site sewage disposal system inspections submit reports or inspection results to the local health jurisdiction regarding any failing system; and
- Develop and maintain an electronic data system of all on-site sewage disposal systems within a marine recovery area to enable the local health jurisdiction to actively manage on-site sewage disposal systems. In assisting development of electronic data systems, the department shall work with local health jurisdictions with marine recovery areas and the on-site sewage disposal system industry to develop common forms and protocols to facilitate sharing of data. A marine recovery area on-site sewage disposal electronic data system must be compatible with all on-site sewage disposal electronic data systems used throughout a local health jurisdiction.

The **intent** is for the local jurisdiction to have an accurate and accessible record of all OSS within its jurisdiction and to plan how to identify ‘unknown’ OSS and failing systems.

CURRENT STATUS OF 2008 PLAN RECOMMENDATIONS

The primary 2008 plan recommendation was to enhance the existing electronic systems and move away from ‘paper’.

2008 RECOMMENDATION: To maximize the benefits from the time of transfer and pumper reporting regulation changes, the existing AMANDA electronic database system should be enhanced. AMANDA currently requires sewage system operation and maintenance (O&M) and permit data to be entered manually. This plan recommends that a web-based system be developed to allow O&M records to be submitted electronically and transferred to and managed by AMANDA. This will allow Health Department staff to better meet the O&M monitoring and management goals, and will be a step towards setting up systems to remind all OSS owners of the O&M needs for their system.

STATUS: *This recommendation has been partially accomplished. The transition from paper to electronic submittal of OSS inspections and pump reports by OSS professionals was accomplished by January 2011 through use of a web-based application called OnlineRME. The OnlineRME system interfaces with the County permit-tracking system, and some data, but not all, automatically transfers on a nightly basis. There are activities that have not yet been automated or converted to electronic applications, such as automated transfer of OSS quarterly sample results from OnlineRME to the county system, electronic submittal of certified homeowner inspection reports and time of transfer applications. The County is currently researching use of a “public portal” for the permit tracking system that would enable the public to submit permit applications and make payments electronically, and for the public and county staff to complete and submit inspection reports electronically.*

A full-time Business Applications Analyst was hired in 2013. Electronic database enhancement and expanded use of web-based applications is part of his work plan.

COMMITTEE REVIEW

Thurston County Environmental Health Division uses three database systems to manage and track OSS records, O&M program administration and operation and maintenance work reported by OSS professionals: AMANDA, OnlineRME and Microsoft Access.

The county permit tracking system, **AMANDA**, is a relational database that integrates all permitting functions, i.e. building permits, land use applications, OSS permits, food service permits, complaints and property violations, etc. The database includes OSS permit records. An electronic OSS record is created for each system when permitted or when ‘discovered’ in the case of existing ‘unknown’ systems. Attached to that permit record, another record is created where inspection and maintenance information is tracked. Upon completion of a satisfactory inspection and any needed maintenance or repairs, an operational certificate (OPC) is issued.

Thurston County, including the urban areas, has an estimated 53,000 OSS with an inventory of 38,430 ‘known’ OSS, i.e. a record of the septic system exists in the AMANDA database. Therefore, approximately 14,570 OSS are ‘unknown’ OSS. ‘Unknowns’ become ‘known’ whenever ...

- The parcel is transferred at a time of sale
- A permitted repair is applied for
- An inspection report is submitted
- A building permit is reviewed
- A study area is inventoried

Since the 2008 OSS Management Plan, Thurston County has continued to improve and enhance their OSS database systems. The goal has been to automate as many actions as possible making the entire system as efficient as possible in order that staff can ...

- Spend less time managing paper records so there is more time to review records and reports to assure that OSS are designed, installed and maintained to a high standard;

- Confirm at time of property transfer that all OSS are being inspected and failures are being repaired; enter all system details into the database; and send O&M information to the new owner;
- Focus at time of OPC renewal on repairing failing OSS and other problems that require attention, i.e. minor repairs, monitoring results that do not meet required standards;
- Provide education and training to OSS owners who qualify and choose to conduct their own inspections; and
- Continue to add to the county's inventory of OSS at time of property transfer and special area studies.

These efficiencies have been accomplished by

- Transitioning from paper to electronic reporting – all septic professionals must file their reports electronically.
- Entering and correcting thousands of OSS records – Environmental Health staff has committed hundreds of hours to this task.
- Hiring a full-time Business Applications Analyst in 2013 – electronic database enhancement and expanded use of web-based applications are part of his work plan.
- Obtaining a grant to use GIS to complete a preliminary countywide inventory of all properties with an OSS.

Professionals now enter all their reports electronically using the **OnlineRME** web-based application that also offers these professionals business tracking options. Realtors and property owners, current or prospective, can check O&M history and current reports. This web-based system electronically transfers the professional reports directly to the county which are then managed by AMANDA. When no deficiencies are noted on the professional reports, operational certificates (OPCs) are issued and sent to the property owner. Therefore, staff sanitarians review only those reports with deficiencies in order to follow through with problems. The county has also enabled an online query for 'record drawings' and system information to assist pumpers and homeowners in finding septic tank and drainfield locations for doing routine inspections.

The O&M Program also uses a **Microsoft Access** database to administer the OPC renewal process. The automated process interfaces with AMANDA. All renewal notices, including notices that an OPC has been successfully renewed, are printed from this Access database.

WHAT NEEDS ATTENTION

There remain a number of areas within the County's database systems where more work is needed in order for the program to operate as efficiently as possible and for the public to access their OSS records and apply for and complete permits online.

- **A public portal is needed** so permit applications, O&M records and payments can be submitted electronically. Currently, permit applicants need to apply for permits in person. Staff must still review paper inspection reports submitted by certified owners which requires a significant amount of staff time. (There are 2,200+ certified owner-inspectors in the marine recovery areas.) This review could be made

more efficient. The County is currently researching use of a “public portal”, or some other method, that would enable the public to submit permit applications and inspection reports electronically.

- **Automated Data Transfer System:** In addition, there are 300+ OSS (proprietary, restaurants, community systems) that require quarterly monitoring and whose operational certificates are renewed annually. These monitoring data reports must be reviewed each quarter. Data transfer from OnlineRME to AMANDA is not fully automated and consequently is not efficient. This data transfer problem needs to be resolved to make this segment of the O&M program more efficient so staff work can focus on those complex systems or community systems with treatment problems.
- **OSS Inventory:** Tax parcel numbers have historically been used to track permit activity on properties. The Assessor’s Office has begun practices to make taxing more efficient that can change the parcel number for a given property. The Health Department is coordinating with other county departments to inventory each septic systems using a unique identifier and to map its geographic location on a geographic information system (GIS) layer. Completion of this septic system GIS layer will increase information access and avoid identification errors.

2014 Recommendations

The Advisory Committee makes the following recommendations:

RECOMMENDATION: Expand the use of on-line services:

- Enable electronic submittal of certified homeowner inspection reports and time of transfer applications.
- Establish a method to enable...
 - the public to submit permit applications and make payments electronically, and
 - The public and county staff to complete and submit inspection reports electronically.
- Automate transfer of OSS quarterly sample results from OnlineRME to the county system.

The recommended timeframe for implementation of this task is end of 2017.

RECOMMENDATION: Continue to complete the countywide OSS inventory and GIS map layer that will establish a unique identifier for OSS that is not dependent upon tax parcel numbers and preserves the OSS history.

RECOMMENDATION: Require all OSS inspections be submitted electronically by 12/2017.



Part 2 – OSS Operation & Maintenance

STATE REGULATION

WAC 246-272A-0015 requires that the On-Site Sewage Management Plan must specify how Thurston County will:

- Identify the operation and maintenance requirements for OSS commensurate with their public health risks;
- Remind and encourage homeowners to complete and document the operation and maintenance inspections required by state law; and
- Enforce OSS owner permit application, operation, monitoring and maintenance and failure repair requirements of state law.

The **intent** is to show an effective process to consider sensitive areas when reviewing OSS permit applications and establish O&M requirements to meet the potential impact of OSS in these areas.

CURRENT STATUS OF 2008 PLAN RECOMMENDATIONS

The 2008 plan made several recommendations in regard to the O&M program and its requirements. Two of the recommendations resulted in new programs: Time of Transfer and the Nisqually Reach Marine Recovery Area.

2008 RECOMMENDATION: Septic tank pumpers submit records for each OSS tank that is pumped or serviced in Thurston County.

***STATUS:** Pumpers are now required to submit a report for each septic tank pumped, and since 2010, all pump reports must be submitted electronically. Approximately 3,780 tanks are being pumped annually. This implemented recommendation has had a significant impact on the county's management of OSS. The county is now able to identify systems that were previously 'unknown', i.e. no records, OSS in urban areas and identify failing systems. In addition, follow-up can be done on those systems where the pump report identifies a problem. Staff are assigned to follow through on those systems identified as failing.*

2008 RECOMMENDATION: OSS be evaluated before the property they serve is transferred or sold, and that the inspection results be submitted to the Health Department, preferably using an electronic system.

***STATUS:** Time of Transfer program has been in place since 2010. To date over 4,000 applications have been processed.* This program has increased the number of inspections of septic systems within the county. Seventy four percent (2,993) of the total 4,041 time-of-transfer applications were for septic systems that were not required to have a renewable operational certificate.

2008 RECOMMENDATION: OSS monitoring, maintenance and education programs for OSS in the Nisqually area should be modeled after the Henderson Watershed Protection Area.

***STATUS:** In 2012 Nisqually Reach Watershed **Protection Area was declared a Marine Recovery Area by the Thurston County Board of Health.** Its formation was modeled after the Henderson Inlet program.*

2008 RECOMMENDATION: This plan recognizes that resources are needed to evaluate the data that is submitted to both identify failing on-site sewage systems and to evaluate the quality of work being done. Performance measures and indicators need to be developed to evaluate the work done under this plan to determine if progress is being made toward plan and regulatory goals.

***STATUS:** Some performance indicators and measures are provided semi-annually to DOH.*

*A summary of data from Thurston County's O&M program was compiled specifically for consideration by the advisory committee. This information is contained within the summary report - **Thurston County On-Site Sewage Operation & Maintenance Program: Current Status.** [Note: this report is the data source for the following 'Committee Review' section.]*

COMMITTEE REVIEW

Thurston County has three active O&M programs where OSS owners are required to have a renewable operational certificate:

- Henderson Watershed Protection Area / Marine Recovery Area– Implemented 2007
- Nisqually Reach Watershed Protection Area / Marine Recovery Area - Implemented 2013
- Countywide systems that require an operation & maintenance certificate for large and complex OSS – June 1999

Operational Certificates and Requirements

In Thurston County the level of oversight and the OSS operation and maintenance requirements are determined by the complexity of the system and the level of public health risk posed if the system fails. All OSS located in designated Marine Recovery Areas have renewable operational certificates (OPC) that receive a high level of oversight by county staff. In addition, all complex alternative type OSS and community OSS are required to have OPCs. The OPC establishes the monitoring and maintenance requirements for the particular OSS. Routine inspections and all needed maintenance and repairs must be done before the OPC is renewed. Most OPCs have three-year renewal cycles.

The Henderson and Nisqually Reach Watershed Protection Area (WPA) / Marine Recovery Area (MRA) programs establish specific inspection requirements for every on-site sewage system within the program boundaries.

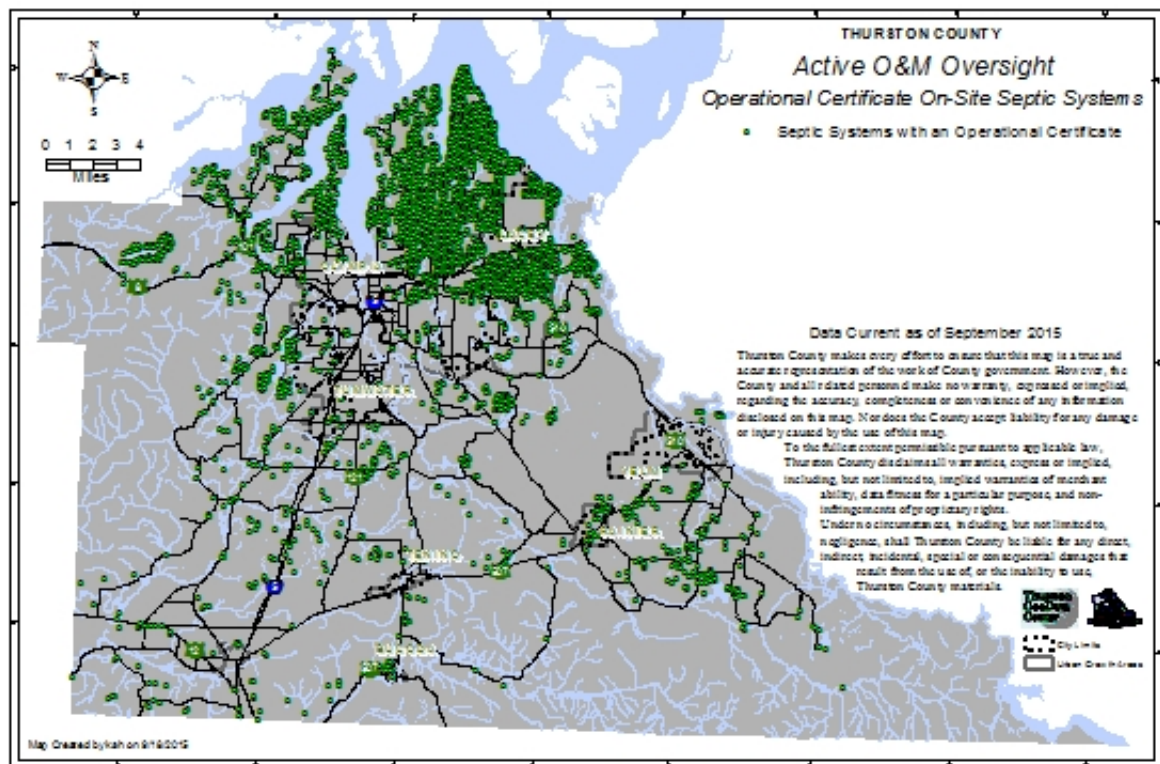
Outside of the MRAs, renewable operational certificates are required based on type or use of the system. It includes complex systems like mounds, sand filters, recirculating gravel filters, experimental and proprietary systems, aerobic treatment units (ATU's), drip dispersal systems, systems with disinfection units, holding tanks, remediation measures, community systems (COSS) and food establishments. Larger on-site sewage systems (LOSS), with design flows greater than 3,500 gpd, are regulated by Washington Department of

Health and do not fall under the authority of the local health jurisdiction. There is a combined total of 13,648 OSS in Thurston County that require renewable operational certificates.

Of the *estimated* 53,000 OSS in Thurston County, 39,000 do not require an operational certificate (OPC). These are gravity systems, pumped-to-gravity and pressure distribution systems that are outside the MRAs. They are not in any regulated O&M program at this time. Operation and maintenance information is available to these property owners online, and two-hour basic OSS workshops are offered by the County as resources.

A list of requirements and recommendations for operating and maintaining an OSS is sent to the OSS owner when:

- An initial OPC is issued for a new or repaired OSS.
- New O&M requirements are established for an existing OSS.
- Ownership of a property with an OSS is transferred.
- A postcard is sent to the owner to confirm that the required operational certificate for an existing OSS has been renewed, and that they should contact the Health Department if they want another copy of the O&M requirements.
- Time of transfer applicants receive the requirements (or recommendations for gravity and pressure distribution systems) for proper operation and maintenance of their septic system.



Time of Transfer

Thurston County adopted a Time of Transfer program in September 2010. A time of transfer report is required before a property served by an OSS can be sold or transferred. The applicant must submit a complete application and fees, have the OSS inspected and have all sewage tanks pumped if they have not been pumped within the last twelve months. If the OSS is failing, it must be repaired. Any system deficiencies,

including expired operational certificates, are reported to the applicant. From September 2010 to December 2012, the number of applications processed was 2,351.

The Time of Transfer program has increased the distribution of septic system maintenance information. While one of the goals of the program was to ensure that new owners received information about the OSS they were purchasing, at times the applicant is a realtor, septic professional or current owner, and the information may not be passed on to the buyer.

OSS Treatment Standard Requirement Sampling

Certain systems, such as those designed to meet a treatment standard, have required sampling as a condition of the operational certificate. The purpose of the sampling is to track the system's performance and ensure adequate sewage treatment prior to disposal. Many of these systems were installed in highly sensitive areas, often as repairs, where soil and site conditions were not adequate for installation of conventional systems. Sampling is typically required on a quarterly basis. Sample results are reported electronically through OnlineRME. All systems that have sampling requirements have a 1-year certificate renewal frequency and must have a service contract with a Certified Monitoring Specialist (CMS) to do inspections and sampling. As of 2012, all Monitoring Specialists are submitting their reports online. Staff is assigned to track these results on a quarterly basis and notify owners and their CMS if the system is not performing as designed.

Maintenance

The most common OSS maintenance activity occurring is septic tank pumping. Since January 2010 pump reports have been filed electronically. During the first 3-year Henderson MRA program cycle, more than a thousand tanks were being pumped each of the first three years. About 3,700 tanks are being pumped annually in Thurston County.

Failing Systems

The Health Department investigates complaints and reports of failing systems. When a failure is confirmed, the department notifies the owner of their responsibility to repair it and tracks progress for compliance. If the owner does not repair the system, the department uses a variety of methods to enforce compliance, including court orders and civil penalties. On average, 100 failures are identified each year.

Failing septic systems are currently identified through the following activities:

- Voluntary application of a repair permit
- Complaint report
- Time-of-transfer inspection report indicating problem
- OPC renewal inspection report indicating problem
- Pump report noting problem
- Failed dye test in MRA or special project area

The O&M program in the MRAs uses dye test methodology to identify failing septic systems. Henderson and Nisqually programs require high risk systems—those with close proximity to the shoreline or tributaries to Puget Sound, and restrictive soils—to have a dye test evaluation once every six years – every other renewal

cycle. The methodology used is effective at finding systems failing to surface water. Approximately fifty dye tests are due every wet season in Henderson. From 2007–2012, fifteen (15) OSS failed the dye test in the Henderson MRA.

The county has been conducting dye tests since the early 1990's. The overall percent of shoreline systems found failing through dye testing has been 13 – 14%. This is the percentage seen during the first two years of the Henderson program in 2007 and 2008. However, that rate dropped to 2 – 4% per year from 2009 through 2012. The reason for lower failure rate is unknown at this time. Following this data may help determine if routine dye testing and physical inspections and maintenance are contributing to lower rates of OSS failure.

When an OSS fails a dye test,

- the owner is notified of the results;
- diagnostics are often performed to determine the cause of failure;
- Notice of Violation is issued with a timeline to repair;
- O&M staff tracks repair progress through the permitting process; and
- Enforcement actions are taken when needed.

Repairs

Repair permits are taken out most often because the OSS is failing. Since 2007, repairs of systems outside the Henderson MRA have been approximately 1.0% (470 permits / 46,490 systems) of the total estimated number of systems. Within the Henderson MRA, 2.0% (132 repair permits / 6,510) of the systems have been repaired. A total of 602 repair permits were issued for OSS from 2007–2012. It is reasonable to conclude that the higher number of repairs within the Henderson MRA is because more failures are found as a result of regular inspections of every system.

Within the Henderson MRA, there was a 71% drop in the number of tank replacement permits between the first inspection cycle (2007-2009) and second inspection cycle (2010-2012). However, there was a 38% decrease in the number of tank replacements within the rest of the county during these same two time periods. The most recent economic downturn may have been a factor in lower permitted tank replacements in the 2010 to 2012 time period. However, it is also possible that the Henderson inspection program identified leaking tanks that had been in that condition for some time, and once those were corrected the numbers decreased. Data from routine inspections may help estimate the life expectancy of sewage tanks.

Repairs to sand filters and mounds include rebuilding / replacing these components. For the six year period 2007 – 2012, 3% of the sand filter, mound and sand filter / mound systems had replacement permits.

Data analysis shows that the majority of repairs are installed within 90 days of being permitted.

Minor Repairs

Minor repairs are repairs made to the OSS or OSS components that do not require a permit from the county. Minor repairs are significant because a failure to correct small system deficiencies and problems can cause an OSS to fail prematurely or cause improperly treated sewage to pollute ground or surface water resources. The Minor Repair definition from the Thurston County Sanitary Code is as follows:

"Minor repair" means the repair or replacement of any of the tightline pipe between a structure and a sewage tank; tightline between a sewage tank and the dispersal component; a

pump; an interceptor drain; sewage tank pumps; pump control floats; effluent filters; pipes connecting multiple sewage tanks; OSS inspection boxes and ports where a sewage tank, treatment component, or soil dispersal component does not need to be replaced; and the replacement of a small section ten (10) feet or less of the SSAS damaged as the result of digging into it as part of an OSS evaluation.

In 2009, the last year of the first 3-year Henderson inspection cycle, there were 431 minor repairs. During the second Henderson 3-year cycle, the minor repairs decreased by half. With routine inspections and required reporting, it may be possible to estimate the number of minor repairs.

Tracking minor repairs is an example of the department's adaptive management. When reviewing Henderson MRA inspection and pump reports, staff noticed that a considerable number of minor repairs were being done and in 2009 began tracking minor repairs.

Financial assistance

Incentives and financial assistance are integral pieces of Thurston County's O&M program. Rebates, grants and loans are available to various groups within the county. Each funding program has eligibility criteria.

Rebates for installing risers over septic components are available only to septic owners in the MRA / Shellfish Protection Districts. The funding source for the rebates is an annual Conservation District assessment of residents within these districts. Rebates are \$50 per riser with a maximum of \$100 per system and two rebate awards per person. The program is administered by O&M program staff.

Riser rebates have been available to septic owners in Nisqually for the same number of years as in Henderson. A sharp increase in the number of Nisqually riser rebates coincided with development and adoption of the Nisqually O&M program.

From 2007 to 2012 a total of 1,427 risers were installed on 873 OSS in Henderson. The number of rebates in Henderson peaked the second and third year of program; 372 risers were installed in 2008 and 377 risers were installed in 2009. Approximately, 13% of the Henderson systems have received rebates for installing risers.

Small grants are offered to low income septic owners within the two shellfish protection districts to help with the cost of inspections, maintenance and minor repairs. These are available to owners enrolled in the senior/disabled property tax exemption program or who have an annual household income of \$40,000 or less per year. Qualifying owners are eligible for a small grant once every three years to coincide with their inspection frequency. The funding source for the rebates is an annual Conservation District assessment of residents within these districts.

The county health department has had a financial assistance program for septic system repairs since 1993. The data shows that while only about 10% of the OSS in the county are within the Henderson Watershed Protection Area, roughly 30% of the repair grant and loan funds distributed were for Henderson OSS repairs.

From 2007 to 2013, over half a million, \$663,880, of financial assistance has helped Thurston County OSS owners operate, maintain and repair their septic systems.

Compliance

Eighty-four percent (84%) of OSS with required OPCs are inspected and needed maintenance on them is completed in a timely manner. However, the notification process is labor intensive since approximately 45% of the owners need more than one notice.

Oversight of the complex systems that require meeting a treatment standard is especially important because they are in highly sensitive areas and need to adhere to treatment standards. If not adequately treating sewage, disposal can pose a risk of fecal coliform or nutrient pollution to ground and surface water. In November 2013, 84% of these 254 complex monitored systems outside the MRA were in compliance; 95% of those within the MRAs were in compliance. Reasons for monitored systems being out-of-compliance include: 1) no CMS contract, 2) sample results not meeting treatment standards, 3) not renewing operational certificate and/or 4) not paying required fees.

Enforcement Effectiveness

When an OPC has not been renewed within 120 days, and no request has been granted for an extension, the OSS is automatically designated as a non-conforming system and is out of compliance with the County sanitary code. This designation is noted in the permit tracking system and can be seen by all permitting staff. The county takes no formal action against the permit holder at this stage. To reinstate an OPC the following is required:

- System inspection by a certified professional
- Pumping of the tank if it is more than a year since the previous pumping
- Completion of any required repairs to the system
- Paying back renewal fees if in the countywide O&M program
- Paying a County field inspection fee
- Completion of an field inspection application for a County OSS inspection

The owner of a non-conforming OSS receives a written notice of the status and a reminder to bring it back into compliance at the time of prescribed renewal due date, i.e. usually three years after the last due date. Eighty-four percent (84%) are in compliance – including both in Henderson and across the county. The process to notify OSS owners of their non-conforming status was automated in 2010.

Enforcement occurs when the owner applies for permits or approval by the County. No permits can be issued for any activity on a parcel with a non-conforming OSS until the OSS is brought back into compliance. For high risk (mostly marine shoreline systems) within the marine recovery areas, enforcement actions are taken to get compliance with inspection and dye test requirements.

For Time of Transfer reports, a non-conforming status is reported, which results in many OSS being brought back into compliance. The department has designated staff who take compliance action when high risk OSS within the marine recovery areas fall into non-conforming status. The typical actions taken first include direct communication attempts to inform the owner and get voluntary action. If unsuccessful, it is followed by a Notice of Violation and can go on to civil penalties and court action if needed.

Summary

Thurston County's Operation and Maintenance program is a 'work in progress'. In the last decade, the program has expanded from 3,000 OSS with required O&M to include two marine recovery areas for a total of more than 13,000 OSS. The program which at the outset used paper is now primarily electronic – a database that stores OSS permit designs, records and maintenance reports; an automated inspection notification system that sends more than 7,500 notices annually; and electronic submittal of OSS inspections and pump reports by OSS professionals through use of a web-based application. More OSS are being routinely inspected and maintained than ever before, and eighty-four percent (84%) with required O&M are in compliance. Failures are being found and repairs completed. Compliance and enforcement are now an integral and specifically funded element of the program. Hundreds of minor repairs to OSS components are being done, thus extending the life of systems. Education has been expanded to include a certification for OSS owners to conduct their own inspections. More and more septic system information is available on the county's website to assist OSS owners in the care and operation of their systems. More than half a million dollars have been distributed to assist Thurston county septic system owners in the operation and maintenance of their systems.

The primary goal of Thurston County's O&M program is to protect public health. The program has been designed to meet the requirements of state law, the County's sanitary code and the County's OSS management plan. Within the two marine recovery areas and for alternative-type systems throughout the county, the O&M program is effective at protecting public health from OSS-related concerns. Other programs such as Time of Transfer have furthered the goal of inventorying unknown systems and increasing inspections and maintenance on gravity and pressure distribution system.

Overall the department is meeting its legal responsibilities as defined in state law with its current programs. The O&M program faces the challenge of how to ensure that all 53,000+ OSS within the county are being routinely inspected and maintained so that public health is protected, and how to fund the program without reliance on diminishing federal and state grants.

WHAT NEEDS ATTENTION

During their discussions, the committee considered the intent of the state regulations that O&M requirements need to be designed to meet the potential impacts of OSS. The committee chose to talk about all OSS within the county. All OSS have the potential to impact an area. Some areas may be more vulnerable than other areas, but all systems have the potential to impact public health and water resources. Therefore, requirements to operate and maintain an OSS should be in place throughout the county. The requirements should be 'adapted' to the vulnerability and sensitivity of the area. The minimum would be a routine reminder that it is time to do a system inspection; the maximum would be akin to the quarterly sampling and annual inspection requirement for complex systems. There is concern about equity and fairness, i.e. the owner of a new alternative system has inspection, maintenance and monitoring requirements while their neighbor with the 50- year- old unknown system has none.

- **All OSS need routine inspection and maintenance:** Of the *estimated* countywide 53,000 OSS, only 14,000, or 26%, are required to have a renewable operational certificate and document routine inspections (i.e., alternative and community systems, those for food establishments and schools, and those within the two marine recovery areas). Thirty-nine thousand (39,000), 74%, of all septic systems in the county are not in a regulated O&M program at this time. Operation and maintenance information is available to owners via the website and basic OSS education workshops offered by the County as resources are available, but routine inspections are not managed or enforced. Committee members

discussed the need for all county OSS owners to regularly inspect their systems. At a minimum, reminders should be sent every three years to those OSS owners who do not have a required OPC.

- **Follow-up quality control inspections:** In order to evaluate if inspections and their respective reports are being done and done accurately, OSS inspections should have follow-up inspections by County staff. Such inspections would also inform the Health Department if there are issues that need attention or require adjustments.

2014 Recommendations

The Advisory Committee makes the following recommendations:

RECOMMENDATION: Send notices to remind owners of gravity and pressure distribution OSS who are not within the county's designated MRAs that routine inspection and maintenance of the system should be done.

RECOMMENDATION: Implement a robust program of quality assurance / quality control (QA/QC) on a representative sample of OSS owners and professionals for all inspections submitted. Prioritize those areas where inspection accuracy is most important for protection of public health and water quality.

RECOMMENDATION: The OSS program shall require that ...

- all OSS owners to be routinely notified of the need to inspect their system,
- system component deficiencies be corrected at time of property transfer, and
- septic design information for every county OSS be available on OnlineRME

RECOMMENDATION: The OSS Management Plan shall be reviewed at a minimum every three years to begin in 2018 and amended as needed.



Part 3 – OSS Management Areas: Marine Recovery Areas, Sensitive Areas, Urban Conversion Areas

STATE REGULATION(S)

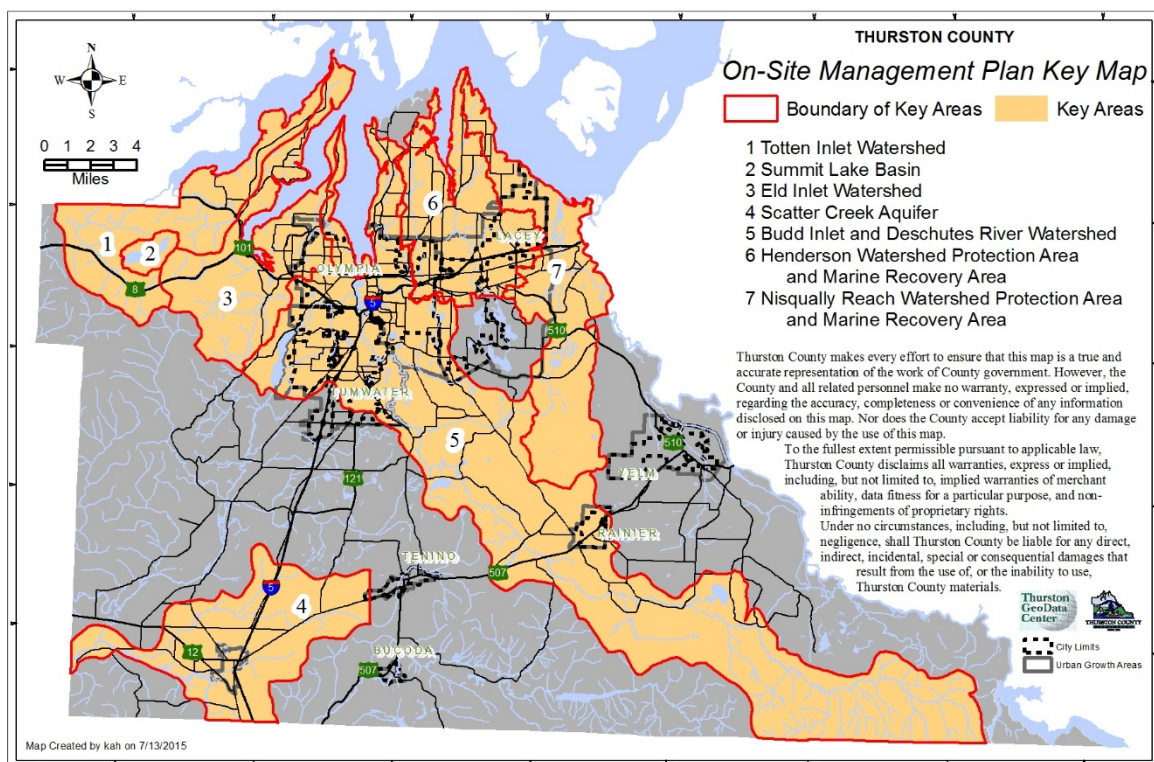
WAC 246-272A-0015(1) requires jurisdictions to:

- Identify areas where OSS could pose an increased public health risk, such as
 - Shellfish protection districts or shellfish growing areas;
 - Sole source aquifers or areas critically impacted by recharge;
 - Designated wellhead protection areas for Group A public water systems;
 - Areas where nitrogen has been identified as a contaminant of concern; and
 - Other areas designated by the local health officer

RCW 70.118A created Marine Recovery Areas (MRA) where additional OSS requirements may be needed to minimize OSS impacts on the receiving waters. The intent is “to enhance local OSS programs in MRAs by inventorying OSS, requiring the inspection of OSS, repairing failing OSS, developing electronic data systems capable of sharing information regarding OSS and monitoring these programs to ensure that they are working to protect public health and Puget Sound water quality. The law requires the jurisdiction to establish an MRA where OSS are ‘a significant factor contributing to concerns associated with:

- Shellfish growing areas that have been threatened or downgraded under chapter 69.30 RCW;
- Marine waters that are listed on the 303(d) list for exceeding federal Clean Water Act standards for low-dissolved oxygen or fecal coliform bacteria; or
- Marine waters where nitrogen has been identified as a contaminant of concern.

The **intent** is to identify existing and potential areas where OSS could pose a public health risk so actions can be taken to mitigate the risks. It is also the intent that local health jurisdictions coordinate activities and information with other County departments and local jurisdictions and government agencies.

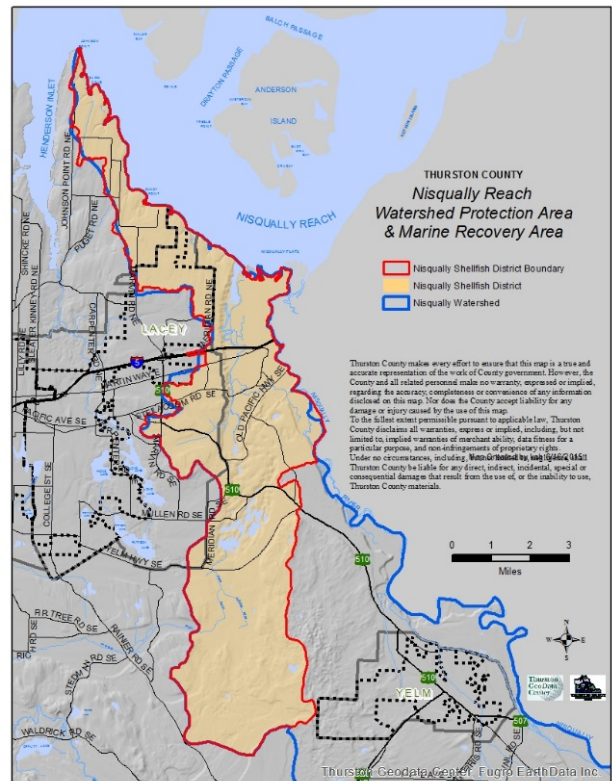
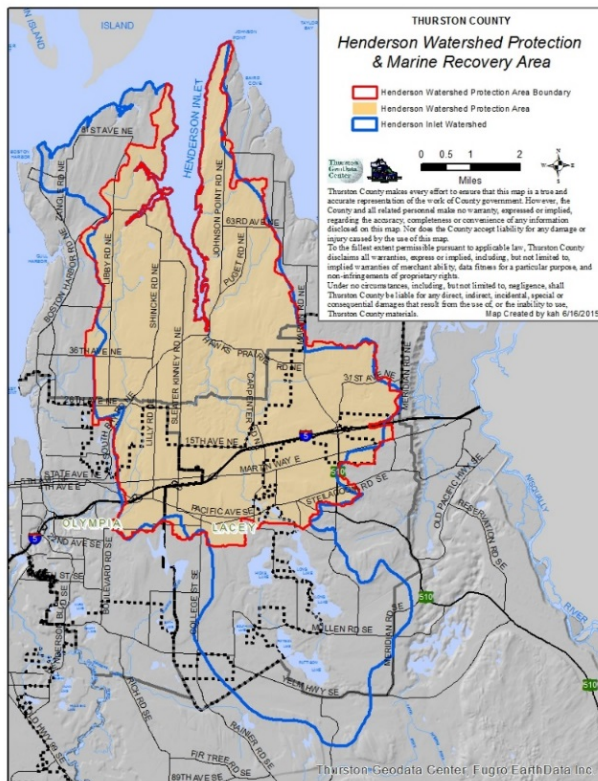


CURRENT STATUS OF 2008 PLAN RECOMMENDATIONS

The 2008 recommendations focused primarily on the marine areas including adding Nisqually Reach as a marine recovery area. While progress has been made in some of the 9 areas identified in the 2008 plan, other areas have not been addressed at all.

2008 RECOMMENDATION: The Henderson Inlet Watershed Protection Area and Nisqually Shellfish Protection District should be recognized as Marine Recovery Areas. The Henderson boundaries and programs would remain intact as currently developed.

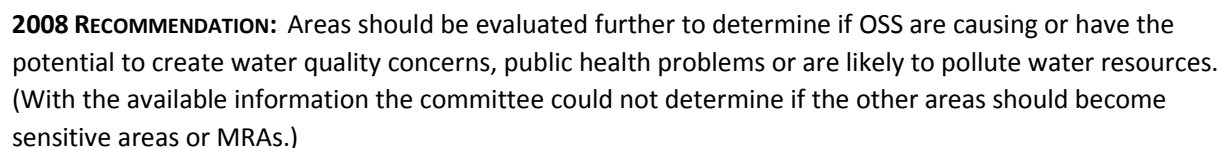
STATUS: *In December 2005 Henderson Inlet was declared a Watershed Protection Area, and in 2012 was declared a Marine Recovery Area by the Thurston County Board of Health. The boundaries and programs remained intact. In 2012 Nisqually Reach Watershed Protection Area was declared a Marine Recovery Area by the Thurston County Board of Health.*



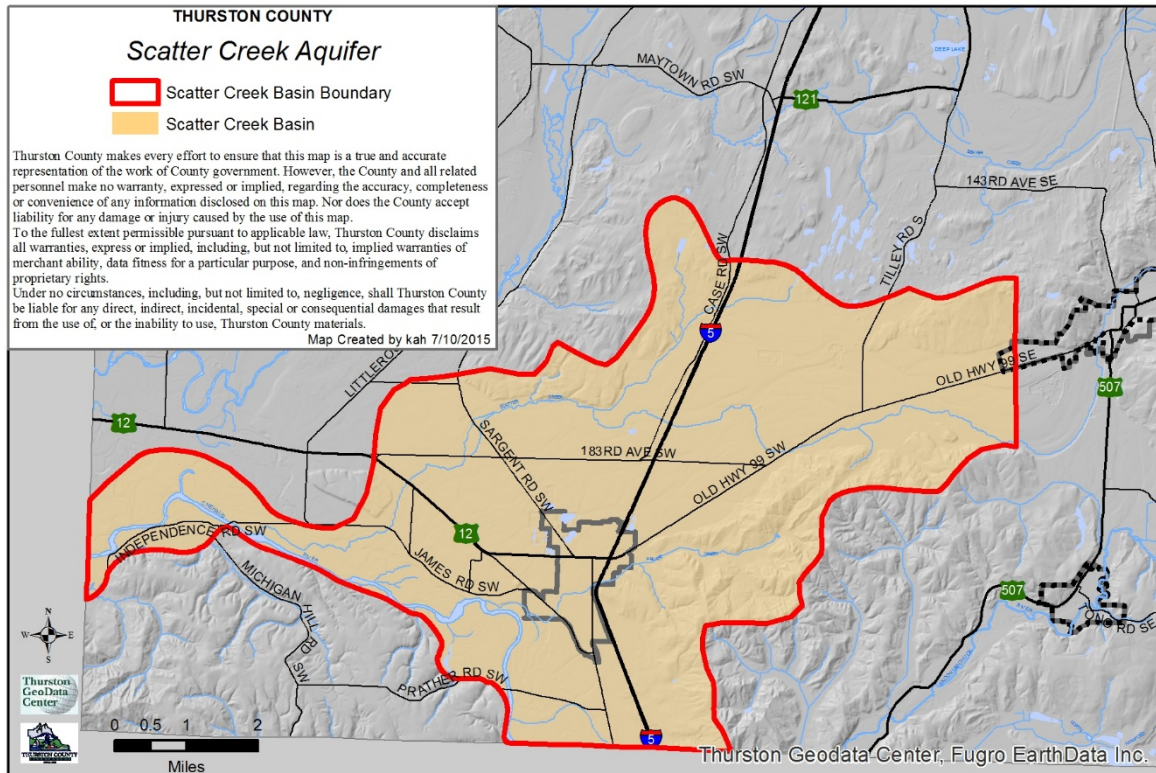
2008 RECOMMENDATION: OSS monitoring, maintenance and education programs for OSS in the Nisqually area should be modeled after the Henderson Watershed Protection Area.

STATUS: *The Nisqually Reach Marine Recovery Area formation was modeled after the Henderson Inlet program.*

STATUS: Thurston County currently has a grant-funded project to conduct shoreline surveys and dye testing of septic systems in areas of declining water quality in Eld Inlet.

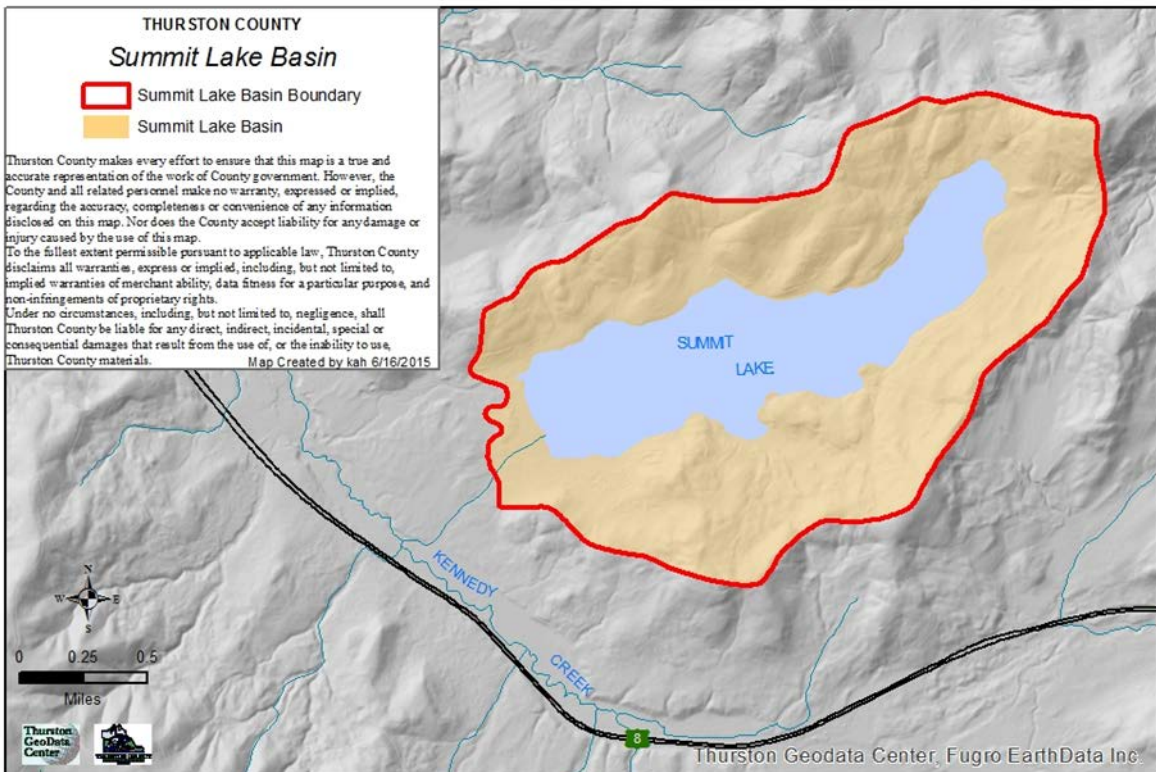
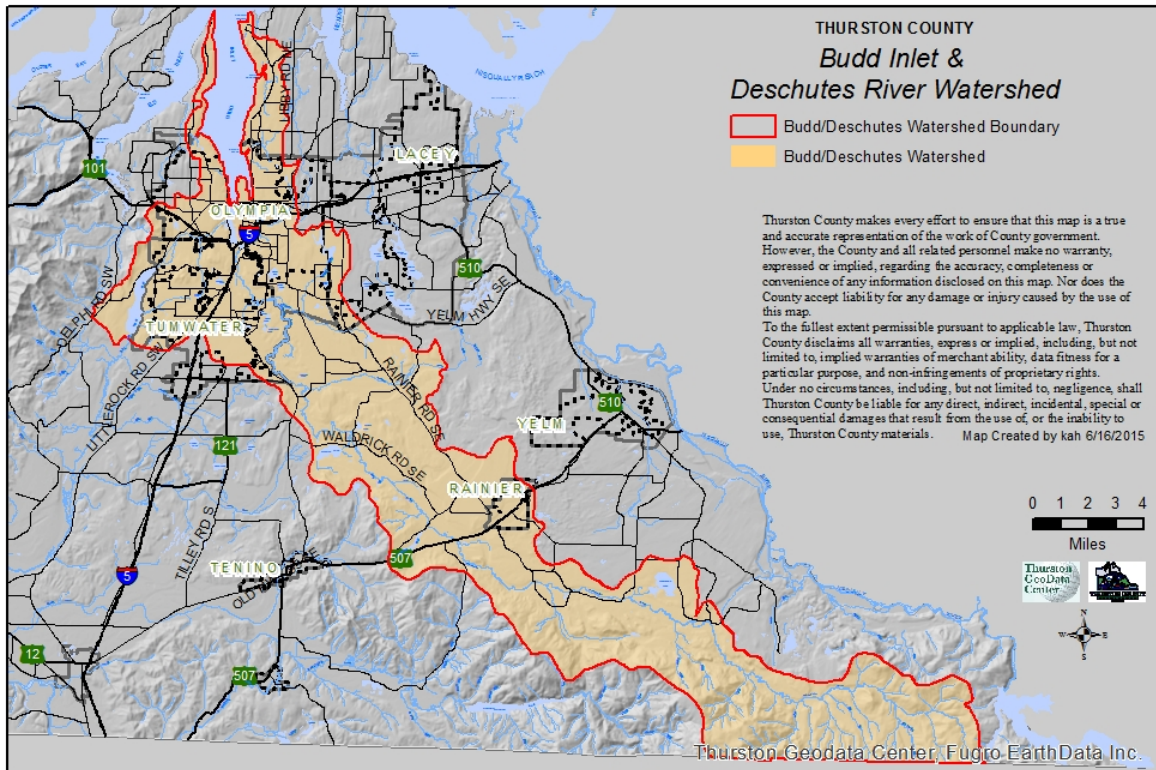


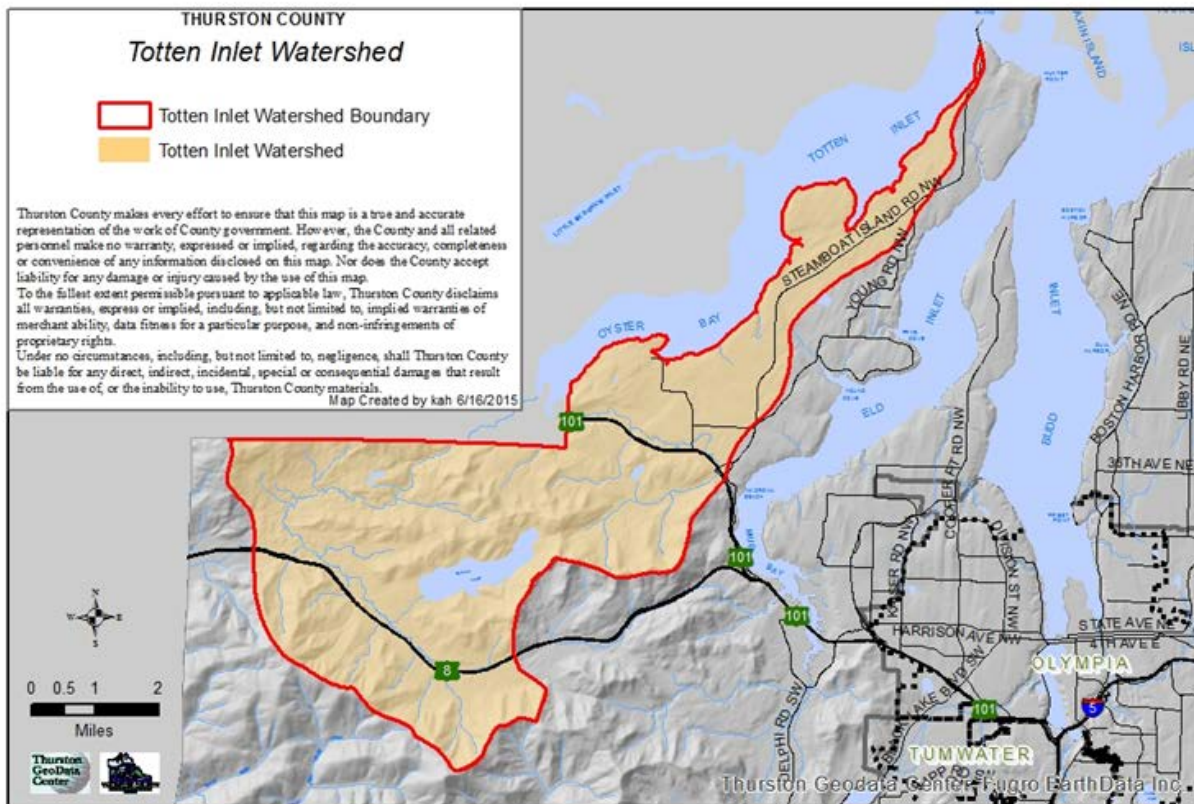
The county health department also has a grant to establish criteria to identify areas within the north county urban growth area where existing OSS pose a risk to ground or surface water and develop a strategy to convert existing neighborhoods to sewer where needed.



2008 RECOMMENDATION: The plan recommends the creation of a Sensitive Areas Workgroup who will work with Health Department staff to evaluate the impact of OSS on water resources within prospective sensitive areas. This group will need to be recruited and oriented, and they will need to refine the criteria used to identify sensitive areas. Staff and resources may be needed to investigate problem areas, perform field evaluations, conduct monitoring to verify problems and analyze monitoring and environmental data.

STATUS: *The Sensitive Areas Workgroup has not been formed. Staff and resources have been limited to undertake this recommendation. Health Department staff have been actively pursuing funding for projects where on-site sewage systems are likely impacting water resources or posing a risk to public health, such as Scatter Creek, Eld Inlet and the urban growth area. A project that has just been completed is a septic to sewer conversion project for Woodland Creek Estates and Covington developments within the Henderson MRA to reduce OSS impacts to Woodland Creek.*





COMMITTEE REVIEW

As stated, the intent of this element of the OSS Management Plan is two-fold: 1) identification of sensitive areas where OSS pose an increased health risk, and 2) where those sensitive areas are marine areas, to designate these areas as Marine Recovery Areas.

The committee heard presentations concerning the following:

- ◆ Surface Water Quality: Fresh and marine water quality data and concerns
- ◆ Groundwater: How septic systems impact groundwater, drinking water issues and the study being done in south county Scatter Creek aquifer.
- ◆ Urban conversion of septic to sewer: This serious issue is being addressed multi-jurisdictionally, and staff presented an overview of the work being done to the committee.

The materials presented and reviewed included:

- DOH Early Warning Reports
- 303d List for Thurston County marine areas and their tributaries
- Shellfish harvesting area classification maps
- Thurston County elevated nitrate and hot spot maps
- Thurston County surface water quality reports
- Sewer utility service area maps
- Puget Sound Action Team South Puget Sound Forum Indicators Report
- Exhibits of Scatter Creek Aquifer modeling

The challenge to the committee was how to propose to manage these areas given the varied issues, complexities and jurisdictions and formulate recommendations for 2014 OSS Management Plan.

WHAT NEEDS ATTENTION

The committee discussed the vast amount of technical information presented. Some studies and final reports are yet to be completed / published. The committee concluded that in the following areas OSS could pose an increased public health risk:

- **Shellfish growing areas: Eld Inlet** exhibits declining water quality, specific monitoring stations with concerns and dye tests of shoreline systems that identify failing septic systems. In the current grant-funded project, dye tests of shoreline OSS are voluntary with a low rate of participation. Twenty years ago when dye testing of all Eld shoreline septic systems was mandatory, the participation rate was 98% with an overall failure rate of 14%. All failing OSS were repaired, water quality improved significantly and the inlet's commercial shellfish growing areas were upgraded to an *Open* classification by DOH in 1998. Water quality has declined in recent years and several growing areas now have a 'threatened' status. Participation in the county's current voluntary OSS survey and dye trace program is about 30%. In order to have a systematic and complete evaluation of all septic systems along Eld Inlet and its watershed, the area should be designated a Marine Recovery Area.

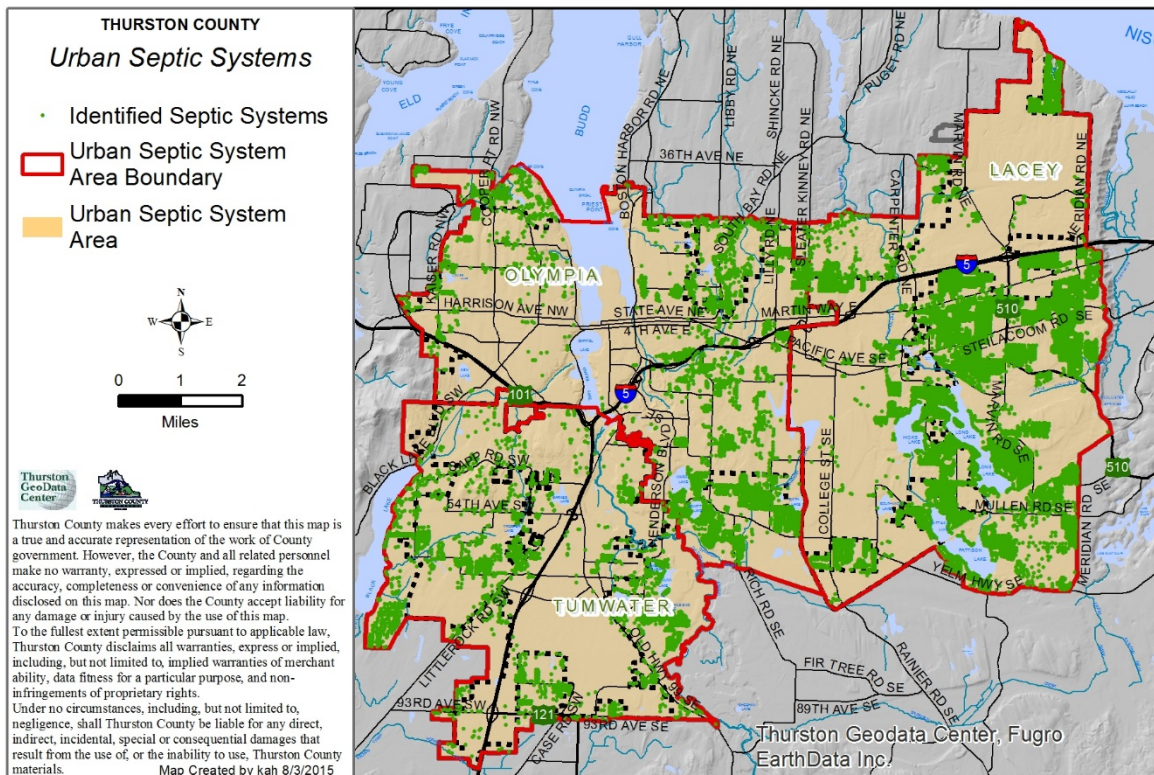
Totten Inlet exhibits the best marine water quality in the county and has the largest commercial shellfish resource. As a protective measure, the inlet and watershed should be considered as a shellfish protection district.

- **Marine waters with low dissolved oxygen, fecal coliform and/or nitrogen as a contaminant of concern:** Budd – Deschutes has dissolved oxygen and fecal coliform violations and excess nutrients and eutrophication. The Department of Ecology, in coordination with affected agencies, jurisdictions and stakeholders, has been conducting a Total Maximum Daily Load study (TMDL) process since early 2000's. The TMDL water quality clean-up plan has not yet been published. When the Budd Inlet/Deschutes River TMDL water quality cleanup plan(s) is published, the OSS-specific action items need to be reviewed and incorporated, as appropriate, into this OSS Management Plan.
- **Vulnerable aquifers:** The Scatter Creek Aquifer Septic System Management Project was a grant-funded project to quantify the risk posed by on-site sewage systems to the aquifer in southern Thurston County and predict the effect of different land use and OSS management scenarios using computer modeling. The original draft septic system management plan recommended that germane action recommendations be included in the OSS Management Plan. This project was completed and the Scatter Creek citizen advisory committee prepared recommendations regarding well siting, septic system permitting and management, data and monitoring, education and outreach and funding. The Thurston County Board of Health adopted Resolution H-3-2014 accepting the recommendations of the citizen advisory committee. The resolution directs Thurston County Public Health and Social Services to work with county departments and other agencies to implement the recommendations as time and resources allow. Resolution H-3-2014 is included as Appendix to this report.

- **Other areas designated by the health officer:**

Summit Lake, located in northwestern Thurston County, has excellent water quality. Most area residents use lake water as their potable water source – some without any type of treatment. The lake is also frequented for its recreational opportunities. Its steep slopes, shallow soils, and generally small lots sizes make siting and functioning of on-site sewage systems around the lake difficult. A 1992-1997 sanitary survey found 58 systems failing (18%) – the majority of which were repaired. Surface waters cannot be adequately protected from contamination to be safely used as a domestic water supply without treatment. A public health advisory issued in 1987 advises against consumption of untreated lake water at Summit Lake. A comprehensive O&M program would ensure routine inspection and maintenance of all OSS within the Summit Lake basin and identification and correction of failing systems. The Summit Lake watershed should be considered for special area designation due to the serious threat posed to the drinking water supply by failing septic systems.

Urban Conversion of Septics to Sewer is a coordinated multi-jurisdictional effort to address OSS within Lacey, Olympia and Tumwater and the urban growth areas surrounding these three cities. Many neighborhoods in the cities and their associated urban areas were developed on septic systems before current density (lot size) and OSS treatment standards were put in place. Staff analyzed density, geologic and soil conditions for all areas in the cities and UGA currently served by septic systems, and found that in many areas septic systems are very likely causing significant degradation of ground and surface water resources. There are not reliable and affordable OSS options that can address these problems for these communities. Connection to sewer is the best solution to protect public health and to be consistent with the cities' long term sewerage planning strategies. Issues of concern include nitrate contamination of groundwater, neighborhoods where sewage surfaces during the wet winter months, developments where lots no longer have areas to repair failing systems and the high costs of extending sewer. When implementation documents are published, the recommendations may need to be incorporated into the OSS Management Plan.



- **Sensitive Areas Work Group:** The committee was presented with a considerable amount of highly technical information. The committee members learned much from the presentations, asked insightful questions and participated in discussions. However, the members repeatedly stated that they lacked the needed expertise to make specific recommendations for identification of sensitive area vulnerabilities. For these issues, the committee recommended formation of a Work Study Group who could review and make recommendations based on their scientific expertise.

2014 Recommendations

The Advisory Committee makes the following recommendations:

RECOMMENDATION: Eld Inlet and its watershed shall be designated as a Marine Recovery Area as soon as possible. Henderson and Nisqually Reach are currently marine recovery areas; each has an enhanced O&M program for OSS within their boundaries. The documented marine water quality decline in Eld in the years since the inlet was reopened to shellfish harvest in 1998 is evidence that the area needs a program like Henderson and Nisqually to prevent water quality deterioration.

RECOMMENDATION: Totten Inlet and Budd / Deschutes shall be considered by the recommended Sensitive Area Workgroup as possible marine recovery areas.

RECOMMENDATION: Summit Lake, which is used by most residents of the lake area for their drinking water source, shall be designated as a Sensitive Area. All wastewater disposal systems in the Summit Lake

watershed shall have required operational certificates and dye testing to assure that routine inspections and maintenance is completed at least every three years and failing systems are identified and repaired.

RECOMMENDATION: Form a Sensitive Areas Workgroup (SAW) who will refine the criteria used to identify sensitive areas and apply the criteria to identify what should be designated as sensitive areas. Staff and resources may be needed to investigate problem areas, perform field evaluations and gather data to assist the workgroup with their task.

RECOMMENDATION: Give the SAW the task of developing a system of measurements in order to report on program progress as well as to assist with adaptive management of the program.

RECOMMENDATION: The SAW shall evaluate OSS-specific recommendations from the Budd Inlet/Deschutes River TMDL, Scatter Creek Aquifer, Urban Septic Assessment projects using the criteria they adopt. The SAW, as appropriate, will recommend sensitive areas and requirements to be included in plan amendments. The Scatter Creek Aquifer Septic System Management Project is complete, including recommendations that were accepted by the Thurston County Board of Health with Resolution H-3-2014. The other two projects are underway with their own designated stakeholder committees and work groups, but were not complete at the time this plan was updated in May 2016.



Part 4 – OSS Education

STATE REGULATION

WAC 246-272A-0015(1) requires jurisdictions to:

- Facilitate education of homeowners regarding their responsibilities to monitor and maintain their OSS
- Remind and encourage homeowners to complete their operation and maintenance inspections.

The **intent** is to educate homeowners of their OSS responsibilities and remind them of the need to inspect and maintain their OSS.

CURRENT STATUS OF 2008 PLAN RECOMMENDATIONS

The 2008 recommendations recognized the value and need for educational opportunities for all persons connected with OSS.

2008 RECOMMENDATION: For the new O&M requirements to work as well as possible, on-site industry professionals, the real estate community, the public and other affected parties need to be educated about the new evaluation and inventory requirements in Thurston County Sanitary Code, Article IV. Educational materials and forms need to be developed. In addition, the advanced training made available to residents in the Henderson Watershed Protection Area has been very well received and seems to have resulted in a community that actively looks after and maintains its on-site sewage systems. This plan recommends that advanced OSS monitoring and maintenance training be made available for all Thurston County residents.

STATUS:

- *Environmental Health staff worked with and provided training to real estate and on-site industry professionals to make them aware of the new county regulations for the MRAs and Time of Transfer program.*
- *The enhanced 5 ½ hour training that certifies owners of gravity, pressure distribution, mound and Glendon systems to conduct their own inspections has been expanded to include owners in the Nisqually Reach MRA, but has not been expanded beyond the MRA's.*
- *Environment Health staff continues to provide assistance to OSS owners via the Health Department's 'Septic Help Line'.*
- *As funding is available, 2-hour public workshops are offered to OSS owners. Course content is basic OSS operation and maintenance information.*
- *Advanced OSS monitoring and maintenance training has not been made available for all Thurston County residents. The county recently received grant funds and is looking at ways to address this recommendation.*

COMMITTEE REVIEW

The committee discussed the intent of the education element that OSS owners be aware, and reminded, of their legal responsibilities as well as the need to provide educational opportunities on how to operate and maintain an OSS.

In order to accomplish these objectives, the goals of OSS education program include the following:

1. Protect public health
2. Protect ground and surface water resources
3. Protect OSS owner's investment
4. Get the OSS information to the user

Currently, Thurston County Environmental Health uses a variety of means to inform and educate OSS owners throughout the county including informational brochures that are included when mailing new operational certificates.

Workshops

Two-hour basic septic system workshops are usually held several times each year in a variety of locations around the county. More than 2,000 people attended these workshops from 1998 to 2008. These workshops are conducted by Health Department on-site sewage staff and educators. Due to budget reductions, since 2011 the two-hour classes have not been conducted unless grant funds were available.

An integral piece of the Henderson Watershed Protection Area program has been a 5 ½ -hour class to train and certify owners of gravity, pressure distribution, mound and Glendon systems to inspect and maintain their systems. The training includes classroom instruction, as well as outdoor instruction at a 'septic system demonstration park', located at Thurston County Health Department, 412 Lilly Rd. NE, Olympia, where the owner training is held.

Since 2007, 161 training workshops have been held, and 2,295 homeowners have been certified. The class is now open to property owners in both Henderson or Nisqually Reach MRAs and who have a standard gravity, pressure distribution, mound or Glendon type system. The training is funded by annual program charges.

The County has evaluated its septic system education programs to determine if this intensive education effort is achieving its goals. A questionnaire was developed and sent (in September 2013) to 150 class attendees. These certified homeowners were chosen at random from class participants of the first 3-year cycle (2007 – 2009). The certified homeowner had to be 'in good standing', i.e. their certification had not been revoked due to failure to renew their certificate. The overall response was very positive. The program content is providing homeowners with the skills to conduct their own septic system inspections. The inspections are being done and are being repeated at time of renewal. Information is recalled, or handouts and personal notes provide the needed refresher. More web-based inspection information is desired. If the attendees were to decide, they would continue the training program.

The department has a grant-funded education project (in progress) that is evaluating use of an online video that would 1) function as a ‘refresher’ for OSS owners who are certified to inspect their own systems, and 2) be a training option for owners of gravity septic systems.

Website / Online information

The Environmental Health website has pages of OSS and O&M information that can be viewed or downloaded. The webpages contain videos, brochures, fact sheets, lists of certified septic professionals, do-it-yourself instructions. More information can be found by ‘drilling down’ on each of the following pages:

- Septic Systems
- Septic System Operation & Maintenance
- Operational Certificates
- Educational Materials / Workshops
- Henderson Watershed Protection Area
- Nisqually Reach Watershed Protection Area

Community Outreach and Events

The Environmental Health educators organize and host the two-hour basic septic system workshops as funding is available. Other educational outreach activities include:

- Thurston County Health Officer articles in *The Olympian*
- “Health Matters” articles in *Talkin’ Trash* distributed by Thurston County Public Works Solid Waste Program
- Homeowner association newsletter articles
- General newspaper and web-based articles
- A septic display used at events such as the county fair and other water quality-related workshops
- Environmental Health blog to provide information on the basics of septic systems.
- Brochures

Septic Help Line

The department has a designated ‘Septic Help Line’ that the public can call with questions, get advice and request technical assistance for their OSS.

WHAT NEEDS ATTENTION

The committee discussed the issues facing OSS education:

- Equity - not every OSS owner has the same opportunities for education or incentives
- Incentives – how to get an OSS owner to fulfill their responsibilities
- Efficiency – how and what efforts should be prioritized
- Funding – how to pay for a comprehensive education program

Resolve equity issues: Discussion focused on the issues of equity and incentives. Current educational opportunities can depend on where an OSS owner lives or what type of OSS they have. If possible, education should be available to all owners and in a variety of formats. It is unfair for some owners to have an educational opportunity whereby they can conduct their own inspections while others with the same type of system and a renewable operational certificate requirement are unable to do so.

Send reminders: In addition, all OSS owners need a reminder that it's time to inspect and maintain their systems – not just those owners with operational certificates. Though this may be viewed as a program management issue, a reminder is also an educational tool. The bottom line is that in order for owners to fulfill their legal responsibilities, they need to be reminded and educated of the inspection frequency.

Education options and formats: People learn differently. Options need to be available for OSS owners. Most importantly, the information must reach the actual OSS user.

Education is a key element to an effective OSS management program. Adequate funding is needed to implement a comprehensive education program. The two-hour workshops have been unavailable since 2010 due to lack of funding.

2014 Recommendations

The Advisory Committee makes the following recommendations:

RECOMMENDATION: The department shall have an education program that reaches a wide variety of audiences, including on-site industry professionals, the real estate community, OSS owners, the public and other affected parties, especially when there are changes in regulations, permitting, county processes and OSS technology. The department shall find opportunities to collaborate with on-site industry professionals, while being careful to keep the lines between the regulatory agency and the industry clear.

RECOMMENDATION: The Environmental Health website shall be updated to make the OSS information easier to find and use.

RECOMMENDATION: Given the success of the intensive training OSS owner workshops for Henderson and Nisqually Reach MRAs, Environmental Health shall explore and implement training options for all OSS owners in the county.



Part 5 – Funding Strategy

STATE REGULATION

WAC 246-272A-0015(1) requires jurisdictions to:

- Describe the capacity of the local health jurisdiction to adequately fund the local OSS plan

CURRENT STATUS OF 2008 PLAN RECOMMENDATIONS

The 2008 recommendation was to seek additional funding to implement the OSS management plan.

2008 RECOMMENDATION: A mechanism for funding these plan elements needs to be developed. While some funding is being provided through the Washington State Department of Health, additional resources are needed to sustain current programs and those envisioned by this plan.

STATUS: Rates and charges for Henderson and Nisqually are charged via the property tax statement as allowed for shellfish protect districts. Grants are being used to augment these programs.

Programs for the remainder of the county are funded by charging fees for services provided and grants. As a result, owners of septic systems outside of Marine Recovery Areas receive fewer services and less oversight. Outside of the MRAs, only alternative OSS and those for food establishments and schools have active oversight through required renewable operational certificates. Routine inspection and maintenance of conventional OSS, regardless of age or location, is solely the responsibility of the owner. County review or involvement for those OSS occurs at times such as property transfers, permit applications, sewage complaints and monitoring of on-site professional reports that indicate malfunctions.

In 2012 state legislation was adopted that enables the 12 Puget Sound boards of health to contract with their county treasurer to collect charges through the property tax statement to administer and implement their OSS Management Plans. Whatcom County is the first county to adopt charges using SSB 6116 (RCW 70.05.190).

The Washington State Department of Health recently started the Sustainable Funding for On-site Sewage Systems project. The project will conduct research and develop recommendations that will help create:

- *A unified, self-sustaining, low-interest loan program to help property owners repair or replace failing septic systems; and*
- *A dedicated funding source to help local health jurisdictions (LHJs) work with homeowners to ensure proper use and care of their systems.*

The Environmental Health Division Director is on the project steering committee.

COMMITTEE REVIEW

Ongoing O&M activities in Thurston County are supported by a variety of funding sources. [See following tables of estimated 2014 revenue and expenditures.] The countywide operational certificate program is funded through an individual fee charged to the owner or applicant at time of initial issuance and upon renewal. The Henderson and Nisqually MRA programs are primarily funded by an annual fee charged through the property tax statement. In the case of Henderson the cost of fully implementing a successful program was greater than estimated, and grants have been used to supplement the budget. Grants have been used to augment work at Nisqually and dye testing and shoreline survey work along Eld Inlet. Grants have also been used to fund project work such as the current “On-Site Sewage Management in the Scatter Creek Aquifer” project and to fund the Urban Septic Assessment project in Lacey, Olympia and Tumwater and their urban growth areas. Beginning in 2010 a fee has been charged for each septic tank pump report filed by pumping companies. This fee funds OSS complaint investigation and compliance activities for OSS reported to have deficiencies. A separate fee is charged for Time of Transfer reports.

2014 O&M Program - Estimated Revenue

Revenue Source	Revenue
Grants	\$375,000
Time of Transfer Report Fee	\$225,000
Pump/Maintenance Report Fee	\$85,000
Operational Certificates (initial and renewals outside of MRA)	\$140,000
Thurston Conservation Assessment	\$60,000
Nisqually MRA Program Charges	\$228,000
Henderson MRA Program Charges	\$245,000
Total revenue	\$1,358,000

2014 O&M Program - Estimated Expenditures

Program	Expenditures
Personnel, includes salaries, benefits and overhead	\$1,203,000
Expenses, includes: GIS consultant, LAB and GIS work, incentives, consultant services, printing, advertising	\$155,000
Total expenditures	\$1,358,000

Most fees must be paid in person by check or credit card. MRA program charges are collected through the property tax billing and collection system. The pump report fee is paid electronically by OSS

pumping firms through a third party online web service and electronically transferred to the County. The County is exploring the use of a web-based permit application system which would allow the public to apply for permits and pay associated fees online.

WHAT NEEDS ATTENTION

Long-term funding strategy: The committee understood that implementation of a long-term funding strategy is needed in order to sustain a viable OSS program, be equitable for all OSS owners and enhance OSS management and services throughout the county. Development of a long-term funding strategy must consider existing factors that affect current funding sources.

- For Thurston County the **economic** factors include:
 - Grants are either decreasing or uncertain
 - Federal EPA NEP grant funding source projected to end in two years (2016)
 - State DOH grants (\$45K) are subject to annual approval (and competition) by state legislators
 - Current DOH financing project for OSS Plan funding is uncertain
 - 2014 estimated completion
 - Funding requires legislative approval and budget authority which is challenging
 - County or General Government funding is very unlikely and historically has not been allocated

The conclusion is that OSS management programs must be self-sustaining.

- In addition to economic factors that affect a long-term funding strategy, other issues need to be addressed:
 - Equity - currently not every OSS owner has the same opportunities for education or incentives
 - Incentives – how to get an OSS owner to fulfill their legal responsibilities
 - Efficiency – how and what efforts should be prioritized
 - Funding – if a comprehensive program ‘must pay for itself’, who pays and how much

Program elements: In order to develop a strategy for funding a comprehensive program to implement this updated plan, the program elements and level of service had to be defined. A program budget and financing options were prepared for a program with the following attributes:

- Continue existing OSS program elements
- Expand program to serve all OSS owners
- Implement MRAs / Sensitive Areas in watersheds as prioritized by the advisory committee
 - Henderson and Nisqually Reach (existing)
 - Eld Inlet watershed
 - Summit Lake
 - Totten Inlet watershed
 - Consider Budd / Deschutes when TMDL implementation is complete
- Develop an efficient countywide inspection reminder system for all OSS
- Increase educational opportunities for all OSS owners throughout county
- Improve online reporting and electronic data transfer
- Pay for baseline programs* with charge on property tax statement (for efficiency and cost savings of collection).

[*Could replace other program fees such as: Time of Transfer application fees, operational certificate renewal fees, pump report filing fee.]

2014 Recommendations

The Advisory Committee makes the following recommendations:

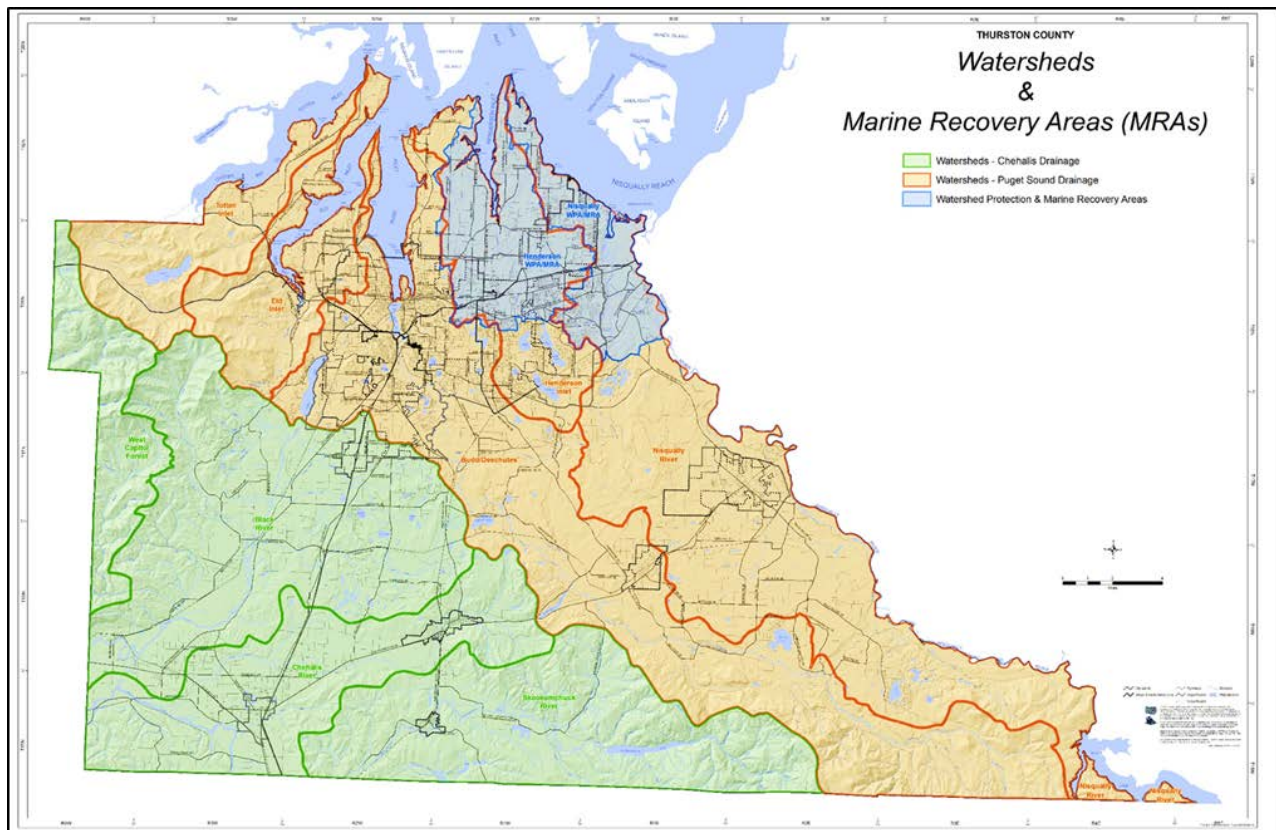
RECOMMENDATION: The committee recommends charging a single flat fee to all OSS throughout the county to provide stable funding to the department for an O&M program countywide and management of special areas, current and future. The recommended fee would replace the current O&M fees, pump report fees, Time of Transfer application fees and MRA charges. The committee recommends an additional charge for multiple OSS per parcel (no cap; amount to be determined) and a 50% rate reduction for those in the senior/disabled tax exemption program.

RECOMMENDATION: Staff participation in the DOH OSS Management Plan Funding project shall remain a priority for Environmental Health.

Tiered Charge Alternative

The Thurston County Board of Health directed Environmental Health staff to develop a tiered alternative that helps assure charges are commensurate with the services provided. This proposal is the Board of Health's preferred alternative to the Advisory Committee's recommended flat fee. This three tier alternative bases charges on the geographic location of the septic system and the work the health department anticipates will be needed to implement the Plan. This structure charges the highest amount for septic systems in Watershed Protection, Marine Recovery, or other special areas designated by the Board of Health, an intermediate amount for septic systems in Puget Sound watersheds outside of special areas, and a lower amount for septic systems in the Chehalis watershed, also outside any special areas. It anticipates additional costs for septic systems in Watershed Protection and Marine Recovery Areas due to periodic dye tracing of high risk systems, and that septic system related water quality investigations will take place in both the Watershed Protection/ Marine Recovery Areas and Puget Sound Drainage areas. As with the original flat fee proposal, the charges would replace the current O&M fees, pump report fees, Time of Transfer application fees and the shellfish protection district charges within the designated Marine Recovery Areas. There would be an additional charge for multiple OSS per parcel (no cap; amount to be determined) and a 50% rate reduction for those in the senior/disabled tax exemption program. The current boundaries for the tiered funding areas are shown below. The boundaries will change if new special areas are created or if existing areas are altered or eliminated.

Map Showing Areas for Tiered O&M Charge Option





Part 6 – Implementation

STATE REGULATION

The **overall intent** of the state regulation WAC 246-272A-0015 is to implement the On-Site Sewage Management Plans in each of the Puget Sound counties.

CURRENT STATUS OF 2008 PLAN RECOMMENDATIONS

The 2008 plan laid out how it was to be implemented – what the order of priority should be.

2008 RECOMMENDATION: A set of performance management criteria and indicators need to be developed and implemented. These need to be evaluated and modified over time so that the effectiveness of the programs described in this plan can be determined.

***STATUS:** A proposed list of measurable outcomes was included as Appendix E of the plan. Some of these outcomes are reported to and used by the Department of Health to evaluate Puget Sound area O&M programs. The O&M program data summary addresses many of these measures. Environmental health staff have used adaptive management methods to evaluate and improve work processes.*

2008 RECOMMENDATION: Based on the current resource limitations in Thurston County, the implementation schedule and work plan have been split into:

- Activities that can be achieved with currently available funding and resources
- Activities that require additional resources

This strategy allocates resources to complete activities that achieve the greatest number of regulatory goals or allow other plan elements to proceed. These include regulation changes needed to implement the OSS inventory elements of this plan, database enhancements to allow O&M records to be submitted on-line, and creation of the Sensitive Areas Workgroup. Because funding is assured only through June 2009, this strategy focuses on activities that can be completed within that window of time. Other plan elements are put on a work plan for the future.

This plan will be a living document. Beginning in 2009 an annual progress report will be presented to the Thurston County Board of Health to document work done to implement the plan along with any proposed changes to it. The plan will be updated periodically to reflect changes that come about from this process.

***STATUS:** The Environmental Health Director has periodically provided updates to the Board of Health. A regular evaluation and update process should be developed and implemented.*

COMMITTEE REVIEW

Since 2008 the Health Department has worked to implement the 2008 plan recommendations. The majority of the recommendations have been completed. Those that have not been implemented were discussed by this advisory committee, and some recommendations have been reiterated as 2014 recommendations.

WHAT NEEDS ATTENTION

CODE REVISIONS:

The committee discussed the following issue that might require changes to regulations:

- When discussing homeowner operation and maintenance of systems, several committee members spoke from personal experience regarding difficulties and frustrations of maintaining pumps within an OSS. Due to the corrosive environment within a pump chamber, electrical wires that run the pump are often located within the chamber and are prone to corrosion. The committee members fully understand that electrical issues are regulated by Washington State Department of Labor & Industries. Nonetheless, the committee views this issue as a problem for homeowners to perform their responsibility to properly operate and maintain their OSS. If state law places O&M responsibility on the homeowner, then components of the system need to be accessible for inspection.

PERFORMANCE MEASUREMENT AND INDICATORS:

- Evaluating how well the OSS program is doing is an integral function of OSS plan management and is routinely done. A written system of measurements is advised.
- Quality control is an integral management function to maintain the integrity of the program elements.

SPECIAL AREAS WORKGROUP (SAW)

- As discussed in Part 3 – OSS Management Areas, creation of a workgroup could serve to guide assessment of pertinent data and make recommendations that require more expertise than an advisory committee might have. They could also help routinely re-evaluate the OSS plan and make adaptive management recommendations.
- The committee learned of several projects that are relevant to an OSS Management Plan:
 - Scatter Creek Aquifer Study
 - Budd-Deschutes TMDL Implementation Plan
 - Urban Conversion Work Group – Septics to Sewer

The expertise and coordination for these efforts is within the respective workgroups, and their work is not yet done. As of this 2014 update it can be said that there is an awareness of work being done across these groups and that an environmental health / public health perspective is represented in each workgroup. When the work is completed, the recommendation from these separate focused projects should be reviewed by the recommended workgroup (SAW) for possible inclusion into the OSS management plan.

2014 Recommendations

The Advisory Committee makes or reaffirms the following recommendations:

Regulations Changes:

RECOMMENDATION: Communicate concern to Washington State Department of Labor & Industries, which establishes electrical regulations, that a solution be found to the issue of electrical components corrosion associated with OSS.

Performance Evaluation:

RECOMMENDATION: Give the Sensitive Areas Workgroup the task of developing a system of measurements in order to report on program progress as well as to assist with adaptive management of the program.

Quality Control:

RECOMMENDATION: Implement a robust program of quality assurance / quality control (QA/QC) on a representative sample of all inspections submitted by OSS owners and professionals. Prioritize those areas where inspection accuracy is most important for protection of public health and water quality.

Workgroup:

RECOMMENDATION: Form a Sensitive Areas workgroup who will refine the criteria used to identify sensitive areas and apply the criteria to identify what should be designated as sensitive areas. Staff and resources may be needed to investigate problem areas, perform field evaluations, and gather data to assist the work group with their task.

RECOMMENDATION: The Sensitive Areas Workgroup (SAW) shall evaluate OSS-specific recommendations from the Budd Inlet/Deschutes River TMDL, Scatter Creek Aquifer, Urban Septic Assessment projects using the criteria they adopt. The SAW, as appropriate, will recommend sensitive areas and requirements to be included in plan amendments. The Scatter Creek Aquifer Septic System Management Project is complete, including recommendations that were accepted by the Thurston County Board of Health with Resolution H-3-2014. The other two projects are underway with their own designated stakeholder committees and work groups, but were not complete at the time this plan was updated in May 2016.

IMPLEMENTATION STRATEGY

Implementation of this updated 2014 On-Site Sewage Management Plan is recommended as follows:

Phase 1: Work with the Board of Health to adopt the legal framework and funding mechanism to implement this plan countywide.

Phase 2: Work underway shall continue and take advantage of opportunities to make incremental progress to fully implement the recommendations in this updated plan.

Implementation of this plan by the Thurston County Board of Health will require a public process. In addition many of the recommendations in this plan will require revisions to Article IV of the Thurston County sanitary code which also requires a public process.

References

On-Site Sewage System Management Plan. Thurston County Environmental Health. January 2008.

On-Site Sewage System Management Plan Guidance. Washington State Department of Health, Division of Environmental Health. June 2006.

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Puget Sound Partnership. The 2012 / 2013 Action Agenda for Puget Sound. August 2012.

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Thurston County On-Site Sewage Operation & Maintenance Program – Current Status. BH Consulting, LLC. December 2013.

Vasey Engineering. On-Site Sewage System Evaluation Using Dye Tracers in Thurston County. January 1996.

Washington Administrative Code. Chapter 246 – 272A: On-Site Sewage Systems. August 2010.

Appendices

APPENDIX A: Washington State Regulations

APPENDIX B: Status of 2008 Thurston County OSS Management Plan Recommendations

APPENDIX C: Resolution H-3-2014 Accepting Recommendations of the Scatter Creek Citizens Advisory Committee

APPENDIX A

Washington State Regulations

Chapter 70.118A RCW

WAC Chapter 246 – 272A

ON-SITE SEWAGE DISPOSAL SYSTEMS — MARINE RECOVERY AREAS

RCW Sections

[70.118A.010](#) Findings -- Purpose.

[70.118A.020](#) Definitions.

[70.118A.030](#) Local health officers to develop a written on-site program management plan.

[70.118A.040](#) Local health officers -- Determination of marine recovery areas.

[70.118A.050](#) Marine recovery area on-site strategy.

[70.118A.060](#) Local health officer duties -- Electronic data systems.

[70.118A.070](#) Department review of on-site program management plans -- Assistance to local health jurisdictions.

[70.118A.080](#) Department to contract with local health jurisdictions -- Funding assistance -- Requirements -- Revised compliance dates -- Work group.

[70.118A.090](#) Chapter to supplement chapter [70.118](#) RCW.

**70.118A.010
Findings — Purpose.**

The legislature finds that:

(1) Hood Canal and other marine waters in Puget Sound are at risk of severe loss of marine life from low-dissolved oxygen. The increased input of human-influenced nutrients, especially nitrogen, is a factor causing this low-dissolved oxygen condition in some of Puget Sound's waters, in addition to such natural factors as poor overall water circulation and stratification that discourages mixing of surface-to-deeper waters;

(2) A significant portion of the state's residents live in homes served by on-site sewage disposal systems, and many new residences will be served by these systems;

(3) Properly functioning on-site sewage disposal systems largely protect water quality. However, improperly functioning on-site sewage disposal systems in marine recovery areas may contaminate surface water, causing public health problems;

(4) Local programs designed to identify and correct failing on-site sewage disposal systems have proven effective in reducing and eliminating public health hazards, improving water quality, and reopening previously closed shellfish areas; and

(5) State water quality monitoring data and analysis can help to focus these enhanced local programs on specific geographic areas that are sources of pollutants degrading Puget Sound waters.

Therefore, it is the purpose of this chapter to authorize enhanced local programs in marine recovery areas to inventory existing on-site sewage disposal systems, to identify the location of all on-site sewage disposal systems in marine recovery areas, to require inspection of on-site sewage disposal systems and repairs to failing systems, to develop electronic data systems capable of sharing information regarding on-site sewage disposal systems, and to monitor these programs to ensure that they are working to protect public health and Puget Sound water quality.

[2006 c 18 § 1.]

70.118A.020

Definitions.

The definitions in this section apply throughout this chapter unless the context clearly requires otherwise.

(1) "Board" means the state board of health.

(2) "Department" means the department of health.

(3) "Failing" means a condition of an existing on-site sewage disposal system or component that threatens the public health by inadequately treating sewage, or by creating a potential for direct or indirect contact between sewage and the public. Examples of a failing on-site sewage disposal system include:

(a) Sewage on the surface of the ground;

(b) Sewage backing up into a structure caused by slow soil absorption of septic tank effluent;

(c) Sewage leaking from a sewage tank or collection system;

(d) Cesspools or seepage pits where evidence of groundwater or surface water quality degradation exists;

(e) Inadequately treated effluent contaminating groundwater or surface water; or

(f) Noncompliance with standards stipulated on the permit.

(4) "Local health officer" or "local health jurisdiction" means the local health officers and local health jurisdictions in the following counties bordering Puget Sound: Clallam, Island, Kitsap, Jefferson, Mason, San Juan, Seattle-King, Skagit, Snohomish, Tacoma-Pierce, Thurston, and Whatcom.

(5) "Marine recovery area" means 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.

(6) "Marine recovery area on-site strategy" or "on-site strategy" means a local health jurisdiction's on-site sewage disposal system strategy required under RCW [70.118A.050](#). This strategy is a component of the on-site program management plan required under RCW [70.118A.030](#).

(7) "On-site sewage disposal system" means an integrated system of components, located on or nearby the property it serves, that conveys, stores, treats, or provides subsurface soil treatment and dispersal of sewage. It consists of a collection system, a treatment component or treatment sequence, and a soil dispersal component. An on-site sewage disposal system also refers to a holding tank sewage system or other system that does not have a soil dispersal component. For purposes of this chapter, the term "on-site sewage disposal system" does not include any system regulated by a water quality discharge permit issued under chapter [90.48](#) RCW.

(8) "Unknown system" means an on-site sewage disposal system that was installed without the knowledge or approval of the local health jurisdiction, including those that were installed before such approval was required.

[2006 c 18 § 2.]

70.118A.030

Local health officers to develop a written on-site program management plan.

By July 1, 2007, the local health officers of health jurisdictions in the twelve counties bordering Puget Sound shall develop a written on-site program management plan to provide guidance to the local health jurisdiction.

[2006 c 18 § 3.]

70.118A.040

Local health officers — Determination of marine recovery areas.

(1) In developing on-site program management plans required under RCW [70.118A.030](#), the local health officer shall propose a marine recovery area for those land areas where existing on-site sewage disposal systems are a significant factor contributing to concerns associated with:

(a) Shellfish growing areas that have been threatened or downgraded by the department under chapter [69.30](#) RCW;

(b) Marine waters that are listed by the department of ecology under section 303(d) of the federal clean water act (33 U.S.C. Sec. 1251 et seq.) for low-dissolved oxygen or fecal coliform; or

(c) Marine waters where nitrogen has been identified as a contaminant of concern by the local health officer.

(2) In determining the boundaries for a marine recovery area, the local health officer shall assess and include those land areas where existing on-site sewage disposal systems may affect water quality in the marine recovery area.

(3) Determinations made by the local health officer under this section, including identification of nitrogen as a contaminant of concern, will be based on published guidance developed by the department. The guidance must be designed to ensure the proper use of available scientific and technical data. The health officer shall document the basis for these determinations when plans are submitted to the department.

(4) After July 1, 2007, the local health officer may designate additional marine recovery areas meeting the criteria of this section, according to new information. Where the department recommends the designation of a marine recovery area or expansion of a designated marine recovery area, the local

health officer shall notify the department of its decision concerning the recommendation within ninety days of receipt of the recommendation.

[2006 c 18 § 4.]

70.118A.050

Marine recovery area on-site strategy.

(1) The local health officer of a local health jurisdiction where a marine recovery area has been proposed under RCW [70.118A.040](#) shall develop and approve a marine recovery area on-site strategy that includes designation of marine recovery areas to guide the local health jurisdiction in developing and managing all existing on-site sewage disposal systems within marine recovery areas within its jurisdiction. The on-site strategy must be a component of the program management plan required under RCW [70.118A.030](#). The department may grant an extension of twelve months where a local health jurisdiction has demonstrated substantial progress toward completing its on-site strategy.

(2) An on-site strategy for a marine recovery area must specify how the local health jurisdiction will by July 1, 2012, and thereafter, find:

- (a) Existing failing systems and ensure that system owners make necessary repairs; and
- (b) Unknown systems and ensure that they are inspected as required to ensure that they are functioning properly, and repaired, if necessary.

[2006 c 18 § 5.]

70.118A.060

Local health officer duties — Electronic data systems.

In a marine recovery area, each local health officer shall:

(1) Require that on-site sewage disposal system maintenance specialists, septic tank pumpers, or others performing on-site sewage disposal system inspections submit reports or inspection results to the local health jurisdiction regarding any failing system; and

(2) Develop and maintain an electronic data system of all on-site sewage disposal systems within a marine recovery area to enable the local health jurisdiction to actively manage on-site sewage disposal systems. In assisting development of electronic data systems, the department shall work with local health jurisdictions with marine recovery areas and the on-site sewage disposal system industry to develop common forms and protocols to facilitate sharing of data. A marine recovery area on-site sewage disposal electronic data system must be compatible with all on-site sewage disposal electronic data systems used throughout a local health jurisdiction.

[2006 c 18 § 6.]

70.118A.070

Department review of on-site program management plans — Assistance to local health jurisdictions.

(1) The on-site program management plans of local health jurisdictions required under RCW [70.118A.030](#) must be submitted to the department by July 1, 2007, and be reviewed to determine if they contain all

necessary elements. The department shall provide in writing to the local board of health its review of the completeness of the plan. The board may adopt additional criteria by rule for approving plans.

(2) In reviewing the on-site strategy component of the plan, the department shall ensure that all required elements, including designation of any marine recovery area, have been addressed.

(3) Within thirty days of receiving an on-site strategy, the department shall either approve the on-site strategy or provide in writing the reasons for not approving the strategy and recommend changes. If the department does not approve the on-site strategy, the local health officer must amend and resubmit the plan to the department for approval.

(4) Upon receipt of department approval or after thirty days without notification, whichever comes first, the local health officer shall implement the on-site strategy.

(5) If the department denies approval of an on-site strategy, the local health officer may appeal the denial to the board. The board must make a final determination concerning the denial.

(6) The department shall assist local health jurisdictions in:

(a) Developing written on-site program management plans required by RCW [70.118A.030](#);

(b) Identifying reasonable methods for finding unknown systems; and

(c) Developing or enhancing electronic data systems that will enable each local health jurisdiction to actively manage all on-site sewage disposal systems within their jurisdictions, with priority given to those on-site sewage disposal systems that are located in or which could affect designated marine recovery areas.

[2006 c 18 § 7.]

70.118A.080

Department to contract with local health jurisdictions — Funding assistance — Requirements — Revised compliance dates — Work group.

(1) The department shall enter into a contract with each local health jurisdiction subject to the requirements of this chapter to implement plans developed under this chapter, and to develop or enhance electronic data systems required by this chapter. The contract must include state funding assistance to the local health jurisdiction from funds appropriated to the department for this purpose.

(2) The contract must require, at a minimum, that within a marine recovery area, the local health jurisdiction:

(a) Show progressive improvement in finding failing systems;

(b) Show progressive improvement in working with on-site sewage disposal system owners to make needed system repairs;

(c) Is actively taking steps to find previously unknown systems and ensuring that they are inspected as required and repaired if necessary;

(d) Show progressive improvement in the percentage of on-site sewage disposal systems that are included in an electronic data system; and

(e) Of those on-site sewage disposal systems in the electronic data system, show progressive improvement in the percentage that have had required inspections.

(3) The contract must also include provisions for state assistance in updating the plan. Beginning July 1, 2012, the contract may adopt revised compliance dates, including those in RCW [70.118A.050](#), where the local health jurisdiction has demonstrated substantial progress in updating the on-site strategy.

(4) The department shall convene a work group for the purpose of making recommendations to the appropriate committees of the legislature for the development of certification or licensing of maintenance specialists. The work group shall make its recommendation with consideration given to the 1998 report to the legislature entitled "On-Site Wastewater Certification Work Group" as it pertains to maintenance specialists. The work group may give priority to appropriate levels of certification or licensure of maintenance specialists who work in the Puget Sound basin.

[2006 c 18 § 8.]

70.118A.090

Chapter to supplement chapter 70.118 RCW.

The provisions of this chapter are supplemental to all other authorities governing on-site sewage disposal systems, including chapter [70.118](#) RCW and rules adopted under that chapter.

[2006 c 18 § 9.]

WAC 246-272A-0015

Local management and regulation.

(1) 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. The plan must specify how the local health jurisdiction will:

(a) Progressively develop and maintain an inventory of all known OSS in operation within the jurisdiction;

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

(i) Shellfish protection districts or shellfish growing areas;

(ii) Sole source aquifers designated by the USEPA;

(iii) 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;

(iv) Designated wellhead protection areas for Group A public water systems;

(v) 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;

(vi) Areas designated by the department of ecology as special protection areas under WAC [173-200-090](#), Water quality standards for groundwaters of the state of Washington;

(vii) Wetland areas under production of crops for human consumption;

(viii) 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;

(ix) Areas where nitrogen has been identified as a contaminant of concern; and

(x) Other areas designated by the local health officer.

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

(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;

(e) Remind and encourage homeowners to complete the operation and maintenance inspections required by WAC [246-272A-0270](#);

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

(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);

(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; and

(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.

(2) After being approved by the local board of health following a public hearing, the local health officers required to develop a written plan under subsection (1) of this section shall:

(a) Supply a copy of the plan to the department;

(b) Supply a copy of the plan to the entities responsible for land use planning and development regulations in the health officer's jurisdiction; and

(c) Implement the plan described in subsection (1) of this section.

(3) The plans of local health jurisdictions required to develop a written plan under subsection (1) of this section shall be submitted to the department by July 1, 2007, and shall be reviewed to ensure the elements described in subsection (1) of this section have been addressed. The department shall provide in writing to the local board of health its review of the completeness of the plan.

(4) For purposes of this chapter, the local health jurisdictions in marine counties are Clallam, Island, Kitsap, Jefferson, Mason, San Juan, Seattle-King, Skagit, Snohomish, Tacoma-Pierce, Thurston and Whatcom.

(5) The local health officers for all other jurisdictions not required to develop a written plan under subsection (1) of this section shall develop a written plan that will provide guidance to the local jurisdiction regarding development and management activities for all OSS within the jurisdiction. At a minimum the plan shall include:

(a) A description of the capacity of the local health jurisdiction to provide education and operation and maintenance information for all types of systems in use within the jurisdiction;

(b) A description of how the local health officer will remind and encourage homeowners to complete the operation and maintenance inspection required by WAC [246-272A-0270](#); and

(c) A description of the capacity of the local health jurisdiction to adequately fund the local OSS plan.

(6) In order to implement the plan described in subsections (1) and (5) of this section, the local health officer shall require the owner of the OSS to:

(a) Comply with additional requirements identified in the plan for the location, design, or performance; and

(b) Comply with the conditions of the operational permit if one is required.

(7) In order to implement the plan described in subsections (1) and (5) of this section, the local health officer may require the owner of the OSS to:

(a) Ensure additional maintenance and monitoring of the OSS;

(b) Provide dedicated easements for inspections, maintenance, and potential future expansion of the OSS;

(c) Place a notice to title identifying any additional requirements for OSS operation, maintenance and monitoring; and

(d) Have an inspection of the OSS at the time of property transfer including the preparation of a "record drawing" if necessary.

(8) No later than July 1, 2006, the department shall develop guidance on local management programs to assist marine local health jurisdictions in plan development.

(9) Until such time as the local board of health decides to adopt its own rules, the local health officer shall enforce this chapter. Local boards of health may adopt and enforce local rules and regulations governing on-site sewage systems when the local regulations are:

- (a) Consistent with, and at least as stringent as, this chapter; and
- (b) Approved by the department prior to the effective date of local regulations.

(10) A local board of health shall apply for departmental approval of local regulations by initiating the following procedure:

(a) The local board shall submit the proposed local regulations to the department.

(b) Within ninety days of receipt, the department shall:

(i) Approve the regulation in writing; or

(ii) Signify automatic tacit approval with the local regulations and permitting local implementation by failing to act; or

(iii) Deny approval of the regulations. If the department determines local regulations are not consistent with this chapter, the department shall provide specific reasons for denial.

(11) Upon receipt of departmental approval or after ninety days without notification, whichever comes first, the local board may implement adopted regulations. The local board shall provide a copy of the adopted local regulations to the department.

(12) If the department denies approval of local regulations, the local board of health may:

(a) Resubmit revised regulations for departmental consideration; or

(b) Submit a written request for a review of the departmental denial within one hundred twenty days from the date the local board of health receives the written reasons for the denial.

(13) Upon receipt of written request for review of the departmental denial, the department shall:

(a) Acknowledge the receipt of the request in writing; and

(b) Form a mutually acceptable advisory panel consisting of:

(i) One departmental employee;

(ii) One employee from a local health jurisdiction other than that which requested the review; and

(iii) One member of the technical advisory committee.

(14) If good faith efforts to reach agreement are unsuccessful, the local board of health may appeal the denial to the Washington state board of health for resolution.

(15) Nothing in this chapter shall prohibit the adoption and enforcement of more stringent regulations by local health departments.

(16) In the plan required in subsection (1) of this section and in local regulations, the local health officer may address water conservation and include options for the nonpotable reuse of gray water. Any treatment and dispersal of gray water outside the residence or structure must comply with this chapter.

APPENDIX B

Status of 2008 Thurston County
OSS Management Plan Recommendations

Status of 2008 Thurston County OSS Management Plan Recommendations

Summary

November 2013

RCW 70.118A.030 requires that the twelve Puget Sound counties “develop a written on-site program management plan to provide guidance to the local health jurisdiction”. The remainder of the RCW outlines the elements that the plan must include as well as the strategies and duties of the parties involved, i.e. local health jurisdictions and State Health.

Working with an advisory committee, Thurston County developed and adopted an On-Site Sewage Management Plan in January 2008.

Five years later, the Plan needs to be updated to reflect current conditions and needs. In order to move forward with that update, the following is a review of the 2008 recommendations and what has been accomplished.

This report lists the current status of the 2008 Plan’s eight elements and their respective recommendations.

- Regulation Changes
- Electronic Database Enhancement
- Identification of Sensitive Areas and Marine Recovery Areas
- Education
- Quality Assurance and Enforcement
- Funding Strategy
- Performance Measurement
- Implementation Strategy

The format of this report is a verbatim text of the executive summary of the 2008 Plan. Following each recommendation is the current status.

Regulation Changes

The committee identified regulation changes that are needed to help inventory OSS in the county and whether they are being properly maintained. The plan recommends that Article IV be amended to require:

RECOMMENDATION: OSS be evaluated before the property they serve is transferred or sold, and that the inspection results be submitted to the Health Department, preferably using an electronic system;

STATUS: Time of Transfer program has been in place since 2010. To date over 4,000 applications have been processed. This program has increased the number of inspections of septic systems within the county. Seventy four percent (2,993) of the total 4,041 time-of-transfer applications were for septic systems that were not required to have a renewable operational certificate.

And,

RECOMMENDATION: Septic tank pumpers submit records for each OSS tank that is pumped or serviced in Thurston County.

STATUS: Pumpers are now required to submit a report for each septic tank pumped, and since 2010, all pump reports must be submitted electronically. Approximately 3,780 tanks are being pumped annually. This implemented recommendation has had a significant impact on the county's management of OSS. The county is now able to identify systems that were previously 'unknown', i.e. no records. In addition, follow-up can be done on those systems where the pump report identifies a problem. Staff are now assigned to follow through on those systems identified as failing.

Electronic Database Enhancement

RECOMMENDATION: To maximize the benefits from the time of transfer and pumper reporting regulation changes, the existing AMANDA electronic database system should be enhanced. AMANDA currently requires sewage system operation and maintenance (O&M) and permit data to be entered manually. This plan recommends that a web-based system be developed to allow O&M records to be submitted electronically and transferred to and managed by AMANDA. This will allow Health Department staff to better meet the O&M monitoring and management goals, and will be a step towards setting up systems to remind all OSS owners of the O&M needs for their system.

STATUS: This recommendation has been partially accomplished. The transition from paper to electronic submittal of OSS inspections and pump reports by OSS professionals was accomplished by January 2011 through use of a web-based application called OnlineRME. The OnlineRME system interfaces with the County permit-tracking system, and some data, but not all, automatically transfers on a nightly basis. There are activities that have not yet been automated or converted to electronic applications, such as automated transfer of OSS quarterly sample results from OnlineRME to the county system, electronic submittal of certified homeowner inspection reports and time of transfer applications. The County is currently researching use of a "public portal" for the permit tracking system that would enable the public to submit permit applications and make payments electronically, and for the public and county staff to complete and submit inspection reports electronically.

A full-time Business Applications Analyst was hired in 2013. Electronic database enhancement and expanded use of web-based applications is part of his work plan.

Identification of Sensitive Areas and Marine Recovery Areas

Health Department staff and the advisory committee evaluated land use, shellfish closure data and existing water quality information to identify areas where OSS could pose an increased public health risk or where existing OSS are a significant factor contributing to concerns. They identified nine areas where OSS could pose an increased public health risk:

- Henderson Watershed Protection Area
- Nisqually Reach Shellfish Protection Area
- Eld Inlet
- Totten Inlet
- Budd Inlet
- Summit Lake
- Southern Thurston County (Scatter Creek Area)
- McAllister Geologically Sensitive Area
- Shana Park Wellhead Protection Area/East Olympia Aquifer

After further evaluation the advisory committee concluded:

RECOMMENDATION: The Henderson Inlet Watershed Protection Area and Nisqually Shellfish Protection District should be recognized as Marine Recovery Areas:

The Henderson boundaries and programs would remain intact as currently developed.

STATUS: In December 2005 Henderson Inlet was declared a Watershed Protection Area, and in 2012 was declared a Marine Recovery Area by the Thurston County Board of Health. The boundaries and programs remained intact.

RECOMMENDATION: OSS monitoring, maintenance and education programs for OSS in the Nisqually area should be modeled after the Henderson Watershed Protection Area.

STATUS: In 2012 Nisqually Reach Watershed Protection Area was declared a Marine Recovery Area by the Thurston County Board of Health. Its formation was modeled after the Henderson Inlet program.

RECOMMENDATION: The Eld Inlet watershed should be more carefully evaluated to determine if it should be established as Marine Recovery Area.

STATUS: Thurston County currently has a grant-funded project to conduct shoreline surveys and dye testing of septic systems in areas of declining water quality in Eld Inlet. The results will be presented to the advisory committee for consideration of establishing a Marine Recovery Area for Eld Inlet.

RECOMMENDATION: With the available information the committee could not determine if the other areas should become sensitive areas or MRAs. They recommend that these areas be evaluated further to determine if OSS are causing or have the potential to create water quality and public health problems. They should be evaluated using criteria that evaluate if OSS can or are likely to pollute water resources. Specific criteria are described in Part 3 of the plan.

STATUS: *Thurston County currently has a grant-funded project to quantify the risk posed by on-site sewage systems (OSS) to the Scatter Creek Aquifer in Southern Thurston County and predict the effect of different land use and OSS management scenarios using computer modeling.*

The county health department also has a grant to establish criteria to identify areas within the north county urban growth area where existing OSS pose a risk to surface or ground water and develop a strategy to convert existing neighborhoods to sewer where needed. The results of these projects will be presented to the advisory committee for consideration.

While progress has been made in some of the 9 areas identified in the 2008 plan, other areas have not been addressed at all. Staff will review information on other potential sensitive areas with the committee.

RECOMMENDATION: The plan recommends the creation of a Sensitive Areas Workgroup who will work with Health Department staff to evaluate the impact of OSS on water resources within prospective sensitive areas. This group will need to be recruited and oriented, and they will need to refine the criteria used to identify sensitive areas. Staff and resources may be needed to investigate problem areas, perform field evaluations, conduct monitoring to verify problems and analyze monitoring and environmental data.

STATUS: *The Sensitive Areas Workgroup has not been formed. Staff and resources have been limited to undertake this recommendation. Health Department staff have been actively pursuing funding for projects where on-site sewage systems are likely impacting water resources or posing a risk to public health, such as Scatter Creek, Eld Inlet and the urban growth area. Another project that has just been completed is a septic to sewer conversion project for Woodland Creek Estates and Covington developments within the Henderson MRA to reduce OSS impacts to Woodland Creek.*

Education

RECOMMENDATION: For the new O&M requirements to work as well as possible, on-site industry professionals, the real estate community, the public and other affected parties need to be educated about the new evaluation and inventory requirements in Article IV. Educational materials and forms need to be developed. In addition, the advanced training made available to residents in the Henderson Watershed Protection Area has been very well received and seems to have resulted in a community that actively looks after and

maintains its on-site sewage systems. This plan recommends that advanced OSS monitoring and maintenance training be made available for all Thurston County residents.

STATUS: Environmental Health staff worked with and provided training to real estate and on-site industry professionals to make them aware of the new county regulations for the MRAs and time of transfer program.

The enhanced 5 ½ hour training for owners of gravity, pressure distribution, mound and Glendon systems has been expanded to include owners in the Nisqually Reach MRA, but has not been expanded beyond the MRA's. It is a costly program requiring considerable resources that are not currently available. In order to further consider education and training opportunities, two reports will be available for advisory committee review:

- *The first is a summary of Thurston County's current O&M program. Included in that report is a section discussing current education and training options.*
- *The second report is a summary of the OSS Operation & Maintenance Programs of the twelve Puget Sound counties and the education and training options that other counties offer their OSS owners.*

Quality Assurance and Enforcement

RECOMMENDATION: This plan recognizes that resources are needed to evaluate the data that is submitted to both identify failing on-site sewage systems and to evaluate the quality of work being done. Performance measures and indicators need to be developed to evaluate the work done under this plan to determine if progress is being made toward plan and regulatory goals.

STATUS: A summary of data from Thurston County's O&M program has been compiled specifically for consideration by the advisory committee. This information is contained within the summary report of Thurston County's current O&M program.

Funding Strategy

RECOMMENDATION: A mechanism for funding these plan elements needs to be developed. While some funding is being provided through the Washington State Department of Health, additional resources are needed to sustain current programs and those envisioned by this plan.

STATUS: *Rates and charges for Henderson and Nisqually are charged via the property tax statement as allowed for shellfish protect districts. Grants are being used to augment these programs.*

Programs for the remainder of the county are funded by charging fees for services provided and grants. *As a result, owners of septic systems outside of Marine Recovery Areas receive fewer services and less oversight. Outside of the MRAs, only alternative OSS and those for food establishments and schools have active oversight through required renewable operational certificates. Routine inspection and maintenance of conventional OSS, regardless of age or location, is solely the responsibility of the owner. County review or involvement for those OSS occurs at times such as property transfers, permit applications, sewage complaints and monitoring of on-site professional reports that indicate malfunctions.*

In 2012 state legislation was adopted that enables the 12 Puget Sound boards of health to contract with their county treasurer to collect charges through the property tax statement to administer and implement their OSS Management Plans. *Whatcom County is the first county to adopt charges using SSB 6116 (RCW 70.05.190).*

The Washington State Department of Health recently started the Sustainable Funding for On-site Sewage Systems project. *The project will conduct research and develop recommendations that will help create:*

- *A unified, self-sustaining, low-interest loan program to help property owners repair or replace failing septic systems; and*
- *A dedicated funding source to help local health jurisdictions (LHJs) work with homeowners to ensure proper use and care of their systems.*

The Environmental Health Division Director is on the project steering committee

Performance Measurement

RECOMMENDATION: A set of performance management criteria and indicators need to be developed and implemented. These need to be evaluated and modified over time so that the effectiveness of the programs described in this plan can be determined.

STATUS: *A proposed list of measurable outcomes was included as Appendix E of the plan. Some of these are reported to and used by the Department of Health to evaluate Puget Sound area O&M programs. **The O&M program data summary addresses many of these measures.** These measures need to be evaluated and updated. A quality assurance workgroup could assist the county health department in developing performance measures. Environmental health staff have used adaptive management methods to evaluate and improve work processes.*

Implementation Strategy

RECOMMENDATION: Based on the current resource limitations in Thurston County, the implementation schedule and work plan have been split into:

- Activities that can be achieved with currently available funding and resources
- Activities that require additional resources

This strategy allocates resources to complete activities that achieve the greatest number of regulatory goals or allow other plan elements to proceed. These include regulation changes needed to implement the OSS inventory elements of this plan, database enhancements to allow O&M records to be submitted on-line, and creation of the sensitive area workgroup. Because funding is assured only through June 2009, this strategy focuses on activities that can be completed within that window of time. Other plan elements are put on a work plan for the future.

This plan will be a living document. Beginning in 2009 an annual progress report will be presented to the Thurston County Board of Health to document work done to implement the plan along with any proposed changes to it. The plan will be updated periodically to reflect changes that come about from this process.

STATUS: Art Starry, Environmental Health Director, has periodically provided updates to the Board of Health. A regular evaluation and update process should be developed and implemented.

Conclusion

Many of the recommendations have been completed. Those that have not been done should be re-evaluated using current information and discussed to formulate recommendations for the updated plan.

APPENDIX C

Resolution H-3-2014

Accepting Recommendations of the
Scatter Creek Citizens Advisory Committee

RESOLUTION NO. H-3-2014

A RESOLUTION accepting the recommendations of the Scatter Creek Citizen Advisory Committee and directing the Public Health and Social Services Department to develop implementation of the Advisory Committee's recommendations through its own actions or coordination with other county departments and other agencies as time and resources allow.

WHEREAS, the Scatter Creek aquifer is a shallow, unconfined, extremely vulnerable ground water supply and is the sole source of drinking water for more than 18,000 area residents; and

WHEREAS, past sewage disposal practices and land use activities have resulted in elevated levels of nitrate and fecal coliform, violations of drinking water standards, increased public health risks, and water quality degradation; and

WHEREAS, the Thurston County Board of Health appointed a citizen advisory committee to help guide community discussion regarding the water quality of the Scatter Creek aquifer, on-site sewage system impacts, sewage system management issues, and to assist in the development of a ground water protection strategy; and

WHEREAS, the Advisory Committee evaluated the risks posed by on-site sewage systems under six different land use scenarios using the results of fate and transport simulations from the refined and calibrated numerical ground water model; and

WHEREAS, after two years of meetings with experts in water quality, ground water modeling, and public health, and the public, the Advisory Committee completed its evaluation and concluded:

- The aquifer is vulnerable to contamination from septic systems and land use activities;
- Elevated nitrogen levels in the aquifer have decreased over time and seem to be trending lower, and the ground water model predicts that average nitrate concentrations in the most vulnerable part of the study area will be less than half the maximum contaminant level of 10 mg/l;
- Current aquifer conditions and worst case model results do not warrant taking regulatory action at this time;
- Monitoring water quality trends, the accuracy of the ground water modelling, water quality deeper in the aquifer, the extent and duration of spikes in water contaminants, chemicals of emerging concern, and the presence of pathogens such as viruses should occur so action may be taken when needed;
- Zoning, land use and health regulations generally have protected the aquifer from nitrates and many other contaminants, however, health and land use regulations can

be strengthened to help assure the optimal placement of new septic systems and wells to minimize the potential for contaminating drinking water supplies;

- With proper information, education, and incentives, area residents will be good stewards and take action protect the aquifer; and

WHEREAS, the advisory committee developed recommendations on septic systems, well siting, ground water monitoring and data management, and education and outreach; and

WHEREAS, the ground water strategy and recommendations were reviewed by the Thurston County Board of Health; and

WHEREAS, the Thurston County Board of Health accepts the recommendations of the Advisory Committee as measures to help protect the Scatter Creek aquifer; and

WHEREAS, the Advisory Committee recommendations should be implemented as resources allow;

NOW, THEREFORE, THE THURSTON COUNTY BOARD OF HEALTH HEREBY RESOLVES that

1. The recommendations of the Scatter Creek Advisory Committee attached hereto are hereby accepted.

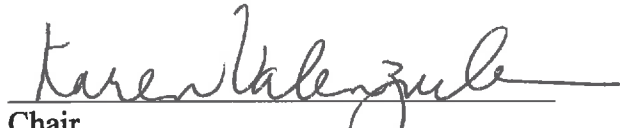
2. The Public Health and Social Services Department is directed to develop implementation of the Advisory Committee's recommendations through its own actions or coordination with other county departments and other agencies, as time and resources allow.

ADOPTED: December 16, 2014

ATTEST:

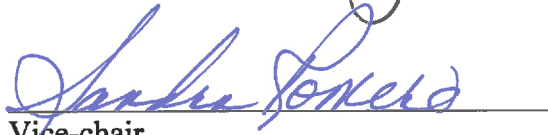
BOARD OF HEALTH
Thurston County, Washington

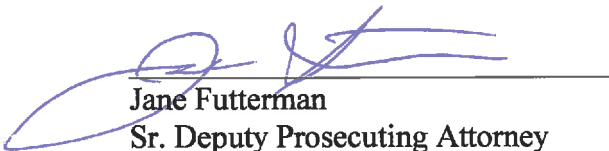

Clerk of the Board La Boretta Bowmer

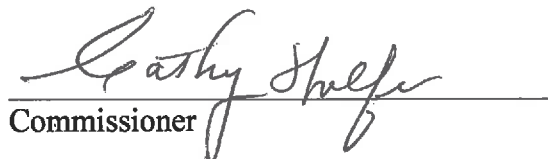

Chair

APPROVED AS TO FORM:

JON TUNHEIM
PROSECUTING ATTORNEY


Vice-chair


Jane Futterman
Sr. Deputy Prosecuting Attorney


Commissioner

Final Recommendations of the Scatter Creek Aquifer Citizen's Committee: 10/1/14

Scatter Creek Aquifer – Septic System Management Project

Well Siting Recommendations

1. Consider changing the shape (not the overall square footage) of well sanitary control areas from a circle with a 100-foot radius, to a shape that would be more protective and better take into account the groundwater flow.
2. Require developers to identify the location of septic systems and known pollution sources and locate wells in the safest locations that are likely to preserve and protect water quality to the maximum extent possible.
3. Consider revising health and land use regulations to give regulators the authority to require that wells be drilled in locations and that property be developed to minimize the risk to wells from recognized contamination sources.

Septic Recommendations

1. The health department should encourage and provide incentives for nitrogen-reducing septic system technologies where appropriate.
2. The health department should educate the public that alternative systems, such as composting toilets and incinerating toilets, can be permitted and installed in Thurston County. These systems should be recognized as an approved nitrogen-reduction and water conservation method.
3. The health department should routinely provide education and outreach to residents and businesses in the Scatter Creek Aquifer Area about septic system operation and maintenance.
4. Support the implementation of Article III, Section 5.1 that refers to new well siting. In the Scatter Creek Aquifer Area, particular attention should be paid to assure that septic systems are installed in locations that reduce the potential to create plumes of contamination that can adversely affect down gradient properties and wells.
5. Thurston County Environmental Health should work in partnership with Thurston County Public Works, City of Tenino, WA Department of Health, WA Department of Ecology, and others to assure that any new sewer treatment plants for towns and urban growth areas and any expansion of existing facilities take into account what is known about the aquifer vulnerability and geology. The health department should provide comment to pursue alternative sewage disposal methods.

Data and Monitoring Recommendations

1. Staff should develop a monitoring program to accomplish the following goals:
 - a) Collect data to systematically check on the water quality of the aquifer, see trends, and identify any emerging concerns; i.e. an early warning system.

- b) Evaluate the effects of changes in the environment, such as the effects of recommendations of this committee.
 - c) Check on the predictive accuracy of the computer groundwater model.
 - d) Monitor groundwater levels.
 - e) Collect information about water quality deeper in the aquifer.
 - f) Learn more about how pathogens such as viruses move in the aquifer.
 - g) Learn more about the presence and health effects from chemicals of concern such as pharmaceuticals, personal care products, stormwater contaminants, etc.
 - h) Better identify the cause of large fluctuations in nitrates.
 - i) Better identify the frequency and duration of water quality “spikes” that seem to be associated with heavy rainfall events.
 - j) Improve monitoring sites as needed, to better ensure reliability of sampling results.
2. Improve coordination to retrieve and analyze public, private, and tribal water quality data.
 3. Prioritize producing and publishing water quality data and maps at regular intervals so that the data is available to the public.
 4. Maintain the computer groundwater model that was developed for the project as a functional tool.

Education, Outreach and Community Input Recommendations

1. Offer “Septic Sense” workshops in the Scatter Creek Aquifer Area annually.
2. Offer “Keeping Your Well, well” workshops in the Scatter Creek Aquifer Area annually.
3. Continue to provide technical assistance services offered by the Thurston Conservation District and WSU Extension.
4. Explore, evaluate, and use effective multiple methods such as newsletters, newspapers, presentations, special events, displays, websites, social media, interactive methods, and other means to regularly share water quality protection messages, educate, and market services without alarming people.
5. Prioritize outreach to tenants/landlords, new home owners, new property owners, and students.
6. Develop a packet of water and sewage treatment options with pros and cons, upkeep and responsibilities of various systems to provide to people seeking building permits.
7. Make technical assistance available from the county for people with septic and well questions.
8. Establish an ongoing aquifer protection advisory group to meet annually and as needed for status updates and to address emerging issues.

Funding Recommendations

Estimated costs to fully implement the Scatter Creek Aquifer Citizen's Committee recommendations are \$212,100 of one-time costs. Annual costs range from \$114,200 to \$123,200, depending on options.

One-time costs include items such as:

- Drilling monitoring wells to examine the water deep in the aquifer, a current data gap;
- Staff time to implement code and policy changes;
- Time to research and develop new educational materials.

Ongoing annual costs include items such as:

- Routine ongoing groundwater monitoring and data management;
- Incentives to encourage the use of nitrogen-reducing septic system technology where appropriate;
- Regular education and outreach to area residents about actions to protect drinking water quality.

The Scatter Creek Aquifer Citizen's Committee does not recommend new fees or taxes.

They identified the following funding strategies to implement the recommendations. In priority order they are:

1. Seek grants where appropriate
2. Use existing stormwater fees
3. Seek funding from partners
4. Use existing fees