

**KITSAP COUNTY HEALTH DISTRICT**

**LOCAL MANAGEMENT PLAN FOR**

**ONSITE SEWAGE**

**Adopted**

**By**

**Kitsap County Board of Health**

**June 3, 2008**

**Environmental Health Division**

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**BOARD OF HEALTH  
RESOLUTION 2008-06**

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**Resolution Adopting the Kitsap County Health District  
Local Management Plan for Onsite Sewage**

**WHEREAS**, the Kitsap County Board of Health has the authority to promulgate rules and regulations governing the standards for onsite sewage systems pursuant to Chapters 70.05, 70.46, 70.118, and 70.118A of the Revised Code of Washington (RCW), and is charged with enforcement of rules and regulations adopted by the State Board of Health; and

**WHEREAS**, the Washington State Board of Health adopted Chapter 246-272A of the Washington Administrative Code (WAC), On-site Sewage Systems, establishing that by July 1, 2007, the local health officers of health jurisdictions in the twelve marine counties bordering Puget Sound develop Local Management Plans that provide guidance to the local health jurisdiction regarding development and management activities for enhanced oversight of all onsite sewage systems and protection of sensitive areas within the jurisdiction; and

**WHEREAS**, RCW 70.118A supports the enhanced oversight of onsite sewage systems provided in WAC 246-272A and further establishes that the local health officers within the jurisdictions of the twelve marine counties bordering Puget Sound identify and designate Marine Recovery Areas where onsite sewage systems are a significant contributor to concerns with marine water quality; and

**WHEREAS**, the Kitsap County Board of Health adopted, as one of its 2008 health priorities, the continued protection of fresh and marine waters through ongoing monitoring and cleanup activities.

**NOW, THEREFORE, BE IT RESOLVED** that the Kitsap County Board of Health adopts the Local Management Plan for Onsite Sewage Systems and is incorporating it by reference, into Section 7 of Ordinance 2008-1 becoming effective immediately.

**APPROVED:** June 3, 2008

  
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Mayor Kathryn Quade, Chair  
Kitsap County Board of Health

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**KITSAP COUNTY  
LOCAL MANAGEMENT PLAN  
FOR ONSITE SEWAGE**

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## INTRODUCTION

Kitsap County is located on the Kitsap Peninsula. It is bounded on three sides by water, with Hood Canal bordering the west side, Puget Sound the East and Admiralty Inlet the Northern tip. The peninsula lies in the Puget Sound Lowland, a structural downfold between two mountain ranges. The relief is moderately subdued.

There are 228 miles of marine shoreline and 33 miles of fresh water lake frontage in the County. There are no large river systems in Kitsap County, with relatively few perennial streams, most of which are spring fed. Surface drainage is controlled by either the glacially-formed topography or by large channels that were the sites of glacial melt water streams. Precipitation provides the sole source of water for all the streams, lakes, springs, and other surface waters and groundwater.

Most of the areas soils were deposited as a result of several continental glaciations emanating from Canada. The last advance and retreat taking place between 13000 and 15000 years ago. Soils have since developed on narrow north-south elongated ridges which become undulating to rolling on uplands. The predominant deposit and therefore soil parent material, is glacial till, which generally consists of a compact basal till ("hardpan") covered by a thin, discontinuous layer of poorly sorted sand, gravel and silt.

Kitsap County is the third most densely populated County in the state and it continues to grow at a rate of 1% a year since 2000. The population of Kitsap County, based on a 2007 estimate is 244,800, of which 170,000 live in unincorporated portions of the County and 74,800 in incorporated areas. The City of Bremerton with a population estimate of 35,810, is the largest incorporated city with Silverdale, population 19,586 the largest unincorporated urban center. In the next 20 years the population is expected to exceed 330,000.

There are 10 designated Urban Growth Areas (UGA) in the county: Kingston, Poulsbo, Silverdale, Central Kitsap, East Bremerton, West Bremerton, Gorst, Port Orchard/South Kitsap, ULID #6/McCormick, and South Kitsap Industrial Area. Dyes and Sinclair Inlet and Liberty Bay watersheds, in the eastern part of the county and the Eagle Harbor watershed on Bainbridge Island, contain the most residences and industrial development and a majority of the urban areas

Outside of the urbanized centers (Bremerton, Port Orchard, Silverdale, Poulsbo, Kingston, and Bainbridge Island), the county is characterized by scattered, small communities, homes on acreage, and large parcels of undeveloped land. Low density, single-family dwellings and small farms are scattered throughout the County and there are large areas of pasture and forest land. The majority of these residences are on individual private wells or small community water systems and onsite sewage systems. The City of Bainbridge Island is unique in that its' city limits extend to the shoreline around the entire island, yet the only urbanized area on the island is centered around

the old city boundaries of Winslow in the south central portion of the island. The rest of the island fits the previous description of a rural community.

The majority of incorporated areas of Kitsap County are served by sanitary sewer as are some of the unincorporated areas, such as Silverdale, Kingston, Suquamish and Manchester. Most of the remaining unincorporated areas of the County are served by an estimated 66,000 onsite sewage systems (OSS). Extension of sewers into these areas is not anticipated, as many of them are located outside planned urban growth boundaries.

A growing population and unique geographic location on a peninsula, has made the citizens of the County more aware of their limited natural resources and the value they place on them, particularly in regard to water. Water quality, both marine and fresh, therefore, has always been of prime importance to the people who reside in the County. Water provides both recreational outlets (i.e. shellfish, boating, and swimming) as well as the source for all drinking water. The County relies on groundwater for the majority of its drinking water. Protection of this natural resource, therefore, from an environmental and public health standpoint, has been at the forefront of all planning and regulatory activities within the County for the past 50 years. Kitsap County serves as administrative lead for Water Resource Inventory Area 15 (WRIA 15), including all of Kitsap County and portions of Mason and Pierce and Vashon Island in King County. Development of a water resource management plan, pursuant to RCW 90.82, is the responsibility of the Planning Unit, which is comprised of representatives from four counties, five cities, four tribal governments, four major water purveyors, and citizens and interest groups.

Ecology's October 1997 Kitsap Assessment notes that ground water throughout the county is generally of good quality. Water samples from most of more than 1,100 public water supply wells throughout the county met state drinking water standards. Aesthetic standards for iron and manganese were frequently exceeded, as is typical for glacial aquifers in western Washington. It is difficult to quantify and evaluate water availability from contributing aquifers, because comprehensive, historical data on long-term stream flows are lacking in most areas of the County.

Testing of ground water quality at sites of known contamination (landfills, three major military installations, and the Wycoff Wood Preservation Facility), is conducted by Ecology and/or the Health District. These sites are unrelated to onsite sewage, having been caused by historic site uses, including landfill disposal, and military and industrial activities.

The Kitsap County Health District has been actively reviewing and permitting onsite sewage systems (OSS) since 1961, fifteen (15) years prior to the effective date of the first state OSS regulations. Kitsap Health has records of some OSS dating back to the early 1950's, prior to these first onsite sewage regulations. Kitsap County was also the first

county in the state to adopt an onsite sewage system operation and maintenance ordinance (1995) in response to the state adoption of Chapter 246-272 WAC in 1995.

As a result of these milestones, Kitsap County Health District has permit records for the vast majority of the estimated 66,000 developed property parcels with OSS.

In the early 1990s, visionary Kitsap County commissioners recognized the need for a successful water quality program to address countywide stormwater and water quality issues. They crafted Kitsap County's Surface and Stormwater Management Program (SSWM) in 1993, which has evolved into a comprehensive, interagency partnership addressing local issues related to stormwater management, nonpoint pollution and water quality in Kitsap's unincorporated areas. The SSWM program provides stable, ongoing funding to address nonpoint pollution to protect public health and natural resources, meet state and federal requirements and minimize clean-up costs.

The Health District has also led the way in developing one of the most comprehensive OSS Operation and Maintenance (O&M) Programs in the state. In 1995, with the passage of new state OSS regulations, the Health District realized that new, more technically advanced systems would be the future in the OSS industry. Acknowledging this the Health District developed the first O&M Ordinance in the state. The program has developed in the past 13 years to be the model that other local health jurisdictions are trying to follow. It is a very progressive program that provides an adequate level of protection to public health and water quality through education and outreach, inspection and record keeping, permitting and enforcement and operation, monitoring and maintenance.

The OSS Permitting, Operation and Maintenance and SSWM programs, together, have prepared the Kitsap County Health District for new, more stringent state rules and regulations for OSS and requirements for improving water quality in the twelve (12) marine shoreline counties of the state. In July 2005 the Washington State Board of Health adopted Chapter 246-272A WAC- Governing Rules and Regulations for Onsite Sewage Systems and in March 2006 the Washington State Legislature enacted Third Substitute House Bill 1458, which is now RCW 70.118A. Chapter 246-272A WAC requires local health jurisdictions to develop a plan that provides guidance regarding development and management activities for all OSS within the jurisdiction. The plan must address improvements in the following areas:

- Progressively develop and maintain an inventory of all known OSS;
- Identify sensitive areas where OSS could pose an increased public health risk;
- Identify operation, monitoring and maintenance requirements commensurate with the risks posed by OSS in the identified sensitive areas;
- Facilitate education of homeowners regarding their responsibilities to provide O&M for all OSS within the local health jurisdiction (LHJ);
- Remind and encourage homeowners to complete O&M inspections as required by the WAC;
- Maintain O&M records as required by WAC;

- Enforce OSS permit application, O&M inspection, and repair requirements for failing OSS; Describe the capacity of the LHJ to adequately fund the plan;
- Assure the plan is developed in coordination with the comprehensive land use plan of the development agency within the jurisdiction.

RCW 70.118A requires Health Departments for the twelve marine counties within Puget Sound to propose and establish Marine Recovery Area (MRAs) where OSS are a significant contributor to concerns with marine water quality as identified by the following:

- Shellfish growing areas that have been listed as threatened or downgraded by the Washington State Department of Health (DOH) under Chapter 69.30 RCW;
- Marine waters listed as impaired by the Washington State Department of Ecology under Section 303(d) of the federal Clean Water Act for fecal coliform or low dissolved oxygen;
- Marine waters where nitrogen has been identified as a contaminant of concern by the local health officer.

The Health District must not only identify any MRAs within its jurisdiction but must also implement a Marine Recovery Strategy that will demonstrate by July 1, 2012, substantial progress toward the following:

- Locating unknown OSS and ensuring that required inspections are performed to assure they are functioning properly, and repaired if necessary; and
- Locating existing failing OSS and ensuring that system owners make necessary repairs.

The plan, therefore, was written to comply with the requirements in both Chapter 246-272A and RCW 70.118A. The Health District describes in the plan how it intends to provide enhanced oversight of OSS within its' jurisdictional boundaries and will identify MRAs based on monitoring data and the best science available. For those areas identified as MRAs the Health District will present its' strategy for how it proposes to clean up and improve the water quality in those identified areas.

Implementation of the full plan will depend primarily on funding, specifically for that portion of the plan that proposes enhanced oversight of all OSS within the jurisdiction. Without adequate Health District staffing, as well as funding for supplies, administrative overhead and other miscellaneous expenses, it is going to take a much longer period of time to attain this goal. Funding will also be necessary for incorporated areas of the County, which currently are not covered by the Surface and Stormwater Management Program. Bainbridge Island, with its large number of onsite sewage systems, is the largest area affected. Ongoing marine water quality monitoring around the island is necessary to determine threatened shoreline areas, followed by Pollution, Identification and Correction surveys for locating and repairing failing septic systems once an area has been identified as having poor water quality.

Funding, therefore, will be the biggest challenge in trying to provide a comprehensive program for enhanced oversight of OSS and identification of new MRAs. The Kitsap County Health District has the expertise and the technology for developing and implementing an expanded an improved water quality program. To what extent depend, in part, on state and local funding and the political will of the citizens of Kitsap County.

## **PART 1 – DATABASE ENHANCEMENT**

### *Activities*

#### **A. Inventory**

##### **I. Current Onsite Sewage System (OSS) Databases**

- a. Database software used to store and query OSS data: The Kitsap County Health District's onsite sewage management program utilizes three databases: a permit tracking system database (LOGGER) an image permit records database (Stellant) and an operation and maintenance reporting database (eOnsite.NET). All three databases work in conjunction with each other passing needed information back and forth. The three databases can be defined as follows:
  1. **LOGGER:** Is an internally developed custom Microsoft SQL Server database. This database allows entry of permitting/application data by all internal Health District personnel through a Microsoft Access interface, which connects to the MS SQL database. Basic property information entered or modified with LOGGER updates property information located with eOnsite.NET each evening.
  2. **Stellant:** The image permit records system database, which stores property information within a Microsoft SQL Server database, correlating it to a proprietary image storage device. As records are added or created they are first entered into LOGGER, creating the unique property ID and then they are scanned into Stellant.
  3. **eOnsite.NET:** The database was specifically developed to allow septic contractors to enter onsite sewage system related inspection information via the Internet. eOnsite.NET allows the public to retrieve OSS related information, including OSS inspections, from the database. Also built into eOnsite.NET are web-services allowing any web user to call and request to view scanned property records stored within the Stellant. The web based programming interface is programmed in ASP.NET, Java and HTM, which interfaces with a Microsoft SQL Server Database. Basic portions of the inspection data entered into eOnsite.NET are transferred nightly to the LOGGER database.

- b. **Backup procedure to ensure data is not lost:** Each database has its own unique method for data backups. They are as follows:
  1. **LOGGER:** Transaction logs are generated hourly during working hours saving all changes within the database. Each evening a complete backup of the database is conducted and the backup information is stored offsite. Each full backup is kept for a period of one week off-site.
  2. **Stellant:** Stellant utilizes a proprietary data writing process, which is transferred to an optical data platter. The data cannot be modified, only added to, so inherently the data integrity and authenticity is constantly maintained. Once a data platter is filled it is mirrored, then the mirrored copy is transferred off-site for safekeeping.
  3. **eOnsite.NET:** Transaction logs are generated hourly saving all changes within the database. Each transaction log is shipped to a localized storage server and also an out of state remote ftp server for safekeeping. A complete nightly backup of the database is also conducted. The complete backup is again stored on the localized storage server as well as the remote out of state ftp server for safe keeping.
- c. **Type of database used to store OSS records:** Microsoft SQL Server is a scaleable relational database management system that is very robust. The permitting data, scanned records and operation and maintenance data is stored within three independent databases, all linked together to communicate as necessary.
- d. **Capability of database to calculate OSS age:** There are two fields within the LOGGER and eOnsite.NET that can be utilized to track the age of the OSS. The first being the permit approval date and the second being a field added in August of 2006, called "System Installation Date". The oldest date of system permit approval within the database is 6/24/1992.
- e. **Frequency for updating the database:** LOGGER, Stellant and eOnsite.NET are updated on a daily basis. As duplicate or inaccurate records are identified they are corrected immediately. New fields are added regularly based upon need.
- f. **There are multiple levels of maintenance that occur within each database.** Operation & Maintenance service providers may update owner and system information within eOnsite.NET from the internet, whereas Health District Staff may add and/or update property information, including OSS data, within eOnsite.NET, Stellant and the Permit Database LOGGER.

- g. **Responsible agent for maintaining the database and ability to make changes:** The Health District is responsible for maintaining the major functionality and content changes of only the Permitting Database. eOnsite.Net and Stellant are proprietary databases, maintained by their respective developers. Service agreements for maintenance and support are in place for each product vendor.
- h. **Access to data stored** with eOnsite.NET, Stellant and the internal Permitting Database can be accessed through queries by internal Health District IT staff at any time. If a data query request is made to the Health District IT staff it is usually fulfilled with the same day.
- i. **Current number of OSS records in database:** There are currently 49,675 OSS system records within the permit tracking system database (LOGGER) and eOnsite.NET. Stellant includes an additional 12,000 property records that are not identified within LOGGER or eOnsite.NET.
- j. **Estimated number of OSS within local health jurisdiction:** The permit records database of digital images utilizes a system called Stellant. It is estimated that there are approximately 66,000 existing OSS located within incorporated and unincorporated areas of Kitsap County, and approximately 62,000-plus property records in the Stellant database. This estimate is derived from Kitsap County Assessor records and the number of road file records that have been entered into the scanning system, plus a margin of error added to represent the very old non-permitted properties. When the Health District's database integration project is completed, a definitive count of actual permit records and properties with permit records will be available.
- k. **Capability of database to report OSS location:** Every property within the databases can be geo-coded to the center of the associated parcel to produce a GIS map. The databases also have the capability to track latitude and longitude GIS coordinates for both the OSS and wells on the parcel.
- l. **Capability of database to report the type of OSS:** Within eOnsite.NET each individual site component is tracked as installed. For example a pressure distribution system is identified within the database as having a septic tank, a pump tank, a pump control panel and a pressurized drainfield. Furthermore, the component manufacturer and model is tracked.

## II. Adding and Updating Records in the OSS Database and Identifying Unknown OSS

- a. **Process for adding records to the database:** OSS Records are added or updated in the database in a variety of ways which include:
  1. **New OSS on Property:** When a new OSS is installed on a property the Health District enters the permit information into the OSS database LOGGER. The updated property information is transferred over to eOnsite.NET on a nightly basis through automated processes.
  2. **Existing OSS on Property:** When an existing OSS is identified the Health District enters the property and OSS information into the OSS database LOGGER. eOnsite.NET receives the updated property information from LOGGER on a nightly basis through automated processes.
  3. **OSS converted to Sewer:** When a property is converted to sewer a field within the database is checked to identify the property as “sewered”.
- b. **Process for adding OSS records into the database:** All OSS records have been scanned in and indexed in the permit records database. New records are added daily, and backed-up daily, as they are created.

## B. Operation & Monitoring – Record Maintenance

### I. Current O&M Requirements

- a. **OSS requirements for filing OSS reports:** Pursuant to state and local regulations, all alternative OSS, which are defined as any system other than standard gravity system for a single-family residence, are inspected one time per year, at a minimum. Each time the alternative OSS is inspected, an OSS inspection report is submitted to the Health District via eOnsite.NET. Owners of standard gravity systems for single-family residences are required to have their system inspected and/or pumped every three years. The standard gravity system inspection and/or pumping information is to be furnished to the Health District upon request. Requests for such documentation typically only occur when the Health District reviews an application request or loan status report.
- b. **Minimum information required of the O&M provider on O&M report:** The following minimum information is required to be submitted into the database when an OSS inspection report is submitted:

1. Property Owner
  2. Property Address
  3. Property City
  4. Mailing Address
  5. Tax Identification Number
  6. Design Flow
  7. Business Name (if applicable)
  8. Occupancy Type
  9. Submittal Date
  10. Inspection Type
  11. Effluent Surfacing (yes/no)
  12. Repair/Corrections Status (if applicable)
  13. O&M Company Name
  14. O&M Specialist Name
  15. Inspection Date
  16. Onsite Sewage System Status
  17. Indication if the inspection is complete or partial. If it is a partial inspection then the components skipped in the inspection are identified
  18. Status of each individual component (indicate deficiencies)
  19. Submittal of all component inspection questions that were applicable (i.e.: Riser conditions, ATU mechanism working satisfactorily, unit effluent filter cleaned, alarm working satisfactorily, etc.) All components have specific question sets that are answered for every inspection and in turn are all stored within the database upon report submittal.
  20. Next inspection date
- c. **Method for submittal/delivery of O&M report:** All OSS inspection reports are entered online through eOnsite.NET. Upon submittal they are instantly entered into the database.
- d. **Capability of O&M database to report OSS service histories:** Within eOnsite.NET all contractors have the capability to run inspections due reports showing when a property is due next for inspection. It is company specific and through a specified date range.
- e. **Process for assuring that OSS failures are reported in a timely manner:** When an inspection report is submitted online by a Maintenance Specialist with an identified deficiency (i.e.: system or component failure) the deficient inspection report is identified within the Jurisdiction Work History Tracking pages located in eOnsite.NET. Deficiencies can be categorized as low risk, medium and critical, which help the sanitarian prioritize and quickly respond to the most critical site problems first.

## II. Current O&M Database

- a. **O&M database environment:** As identified above, eOnsite.NET communicates with the permit tracking database LOGGER, and is stored within Microsoft SQL Server. There are two methods for data to be entered into the database. The first method allows entry of data by all internal Health District personnel through Microsoft Access, which connects to the LOGGER SQL database: As data is entered into LOGGER the changes/additions update eOnsite.NET nightly. The second method for data entry is by directly utilizing the Internet based solution eOnsite.NET. The web-based version allows contractors and health district personnel to enter all operation and maintenance information such as inspection reports, notes, contracts etc. via the Internet, as well as allowing the public to retrieve OSS related information, including OSS inspections, from the database. The web based programming is done in ASP.NET, Java, HTM and Java.
- b. **Type of database used for O&M storage:** As indicated within Section A.Ia, the O&M records are stored within an independent, O&M specific database called eOnsite.NET.

## III. The way that OSS and O&M Data Are Currently Utilized Through Kitsap Health's Databases

- a. Inspections due ticklers for contractors
- b. Properties without inspections
- c. Properties with proprietary system types
- d. Inspections past due for contractors
- e. OSS Inspection performance criteria
- f. Notification of cancelled contracts – used for enforcement
- g. Send bulk mailings to bring property owner into compliance
- h. Notification of failing OSS
- i. Notification of problems with OSS
- j. Extraction of specific property, system or inspection information to be shown on a GIS map based upon specified criteria
- k. Deficient site inspections

## IV. Database Changes or Enhancements

- a. **Planned method for maintaining and updating O&M records:** The database exceeds all reporting and tracking requirements at this time, therefore there are no plans to change to another type of database
- b. **Method by which data is queried and evaluated:** Data is queried by two methods. The first method being direct query through the IT department.

The second method involves a set of triggers and events that allows notifications to be sent to the desired locations based upon set criteria. For example, if notification of an activity on a property is desired an inspector can enter their email address into the database, which in turn will notify them when such activity occurs.

- c. **Insufficient O&M reports:** Contractors who provide O&M reports on OSS must do so through eOnsite.NET. A complete validation process is conducted on every inspection report submitted which ensures that the report has been submitted properly. Incomplete reports are not accepted.
- d. **Missing O&M reports:** Through eOnsite.NET it is possible to identify properties that have not had an inspection of the OSS during the report period. Standard reports are available that show when the last inspection was completed, specifically identifying properties which are past due for an inspection.

### C. Resources Necessary to Implement Data Components of the Plan

#### I. Enhancements to Hardware, Software

The following primary enhancements are necessary to complete the Health District's onsite sewage data management system plan:

- a. **Quality Assurance review of all records:** Complete a parcel-by-parcel quality assurance review of Stellant to verify tax parcel numbers and street addresses for each parcel record. Due to data management limitations when the Health District started digitizing permit records in 1998, new records for an existing parcel, which were already in the database, could not be appended, or added, to the existing record. Therefore, two (or more) separate records for the same parcel were created.
- b. **Integration of databases:** Integrate LOGGER and Stellant to ensure that changes within LOGGER automatically are populated to Stellant, providing continuity between the two data systems.
- c. **Internet based GIS access:** Provide an internet based GIS information access so that detailed maps can be created depicting database information graphically. The internet based GIS system will pull data from LOGGER, Stellant and eOnsit.NET.
- d. **Server Upgrades:** The web server and the Stellant image servers must be upgraded to accommodate larger and more frequent data requests from the public internet.

## **II. Data Personnel**

The Health District is currently reassessing data personnel needs to accomplish the data enhancements noted above. At this Point it is estimated that a.5FTE IT (\$43,332/6 mo) will be required to do the data enhancements proposed). Progress has slowed on the database integration plan due to funding constraints and unanticipated hardware/software issues encountered during the past year.

It is anticipated that one FTE position (Permit Tech I) for approximately two years (\$61,500/y ear with salary benefits and overhead) will be required to complete the quality assurance review of the permit records database. This position is not currently funded. The Health District continues to complete quality assurance and amendment of records as new applications are completed, but this work does not address existing records for which no new applications have been submitted.

The Health District will reassess data personnel and budget needs as the plan moves forward into implementation.

## **D. Timeline**

At this time, the permit tracking system database is online and functioning, and the permit records system is functioning internally at the Health District. The Kitsap County Health District can, and does, email digital records from the permit records database upon request, and will continue to do so. Integration of the two databases, and integrating the two databases with GIS, is dependent upon obtaining additional revenue sources. Adequate funding is the only roadblock to completing the database integration plan.

## **E. Summary of Database Activities**

- Permit records are stored and maintained in hardcopy and electronic format.
- Electronic permit images are stored and accessed through Stellant's optical imaging system.
- Permit tracking conducted electronically through Access SQL database called LOGGER. A read-only "window-view" of LOGGER is available online to the public through eOnsite.NET.
- Operation and Maintenance inspection reports are submitted to the Health District from certified contractors through eOnsite.NET. These reports are available to the public through eOnsite.NET.
- The Health District is near completion of a project to make the optical image permit records available online through the Health District's

website and eOnsite.Net. Currently, the Health District can email optical image permit records upon request.

- The Health District is near completion of merging LOGGER and Stellant to have a completely populated database for all existing OSS records. Once this is complete, these two databases will be linked with ArcView GIS to enable the creation of maps depicting OSS information, and to allow the access to OSS permit records through either an address or tax number query, or a map location query.

The completion of these remaining projects is contingent upon funding. The Health District intends to use available local management plan funding through the DOH Consolidated Contract to complete these projects in 2008.

## **PART 2 – IDENTIFICATION OF SENSITIVE AREAS**

### *Activities*

#### **A. Methodology Used in Determining Sensitive/Marine Recovery Areas**

##### **I. Methods Currently in Place for Identification of Sensitive Areas**

- a. **Onsite sewage strategy for Sensitive Areas:** The Kitsap County Health District assumes that all OSS pose a potential risk to public health and the environment, in particular designated Sensitive Areas, and as such, the Health District goes to great lengths to ensure that OSS are designed, sited, installed, and maintained appropriately. Kitsap Health has been actively reviewing and permitting OSS since 1961. Every set of regulations that the Kitsap County Board of Health has passed since 1961 have either met, or exceeded, the minimum state regulations.

Through more stringent rules and by handling all OSS in a similar manner, quality and consistency are easier to maintain, thereby protecting public health. Additionally, through rigorous adherence to state and local onsite sewage regulations, which are inherently conservative in nature, public health is protected simply by following the rules.

The Kitsap County Health District also dedicates significant staff time and resources to identify and correct failing OSS, respond to public complaints of failing systems, and collect samples, using environmental surveillance data as an early warning detection method, to identify areas where OSS may be adversely affecting water quality

- b. **Critical Areas Ordinance:** Kitsap County has defined and designated critical areas, pursuant to RCW 36.70A, in the county's Comprehensive Plan and Critical Area Ordinance (CAO). On December 1, 2005, Kitsap

County adopted the “Ordinance Regarding Growth Management, Revisions to Title 19 (Critical Areas)”. The Natural Systems chapter of Kitsap County’s Comprehensive Plan provides a series of goals, objectives and policies to guide future growth in a manner that preserves the county’s natural environment, and works cooperatively with the Land Use chapter to direct intense development away from sensitive areas.

Kitsap County critical areas are mapped through the County Geographic Information System (GIS). **Appendix 1** contains a map summarizing building limitations based on some of these critical area factors. The four incorporated areas of Kitsap County have their own Critical Areas maps with building limitations. Regardless of whether the critical area is within an incorporated or unincorporated area, all permit applications involving an OSS are reviewed for proximity to mapped or known critical areas or areas with building limitations. If critical areas or building limitations are present, a critical areas review occurs and the permit is conditioned and issued. If no critical areas are found on the site the permit is issued.

Kitsap County Health District permits OSS in accordance with state and local onsite sewage regulations and recommended standards and guidance. The Health District reviews a GIS critical areas map with plan submissions, and the local building departments enforce compliance with their respective Critical Areas Ordinance. Health Inspectors are bound by strict OSS siting and construction standards to ensure consistent and adequate sewage treatment. Waivers are approved in accordance with Washington State Department of Health (DOH) guidance and quarterly reports to DOH summarize waivers granted during the period. Community Development requires Health District OSS approval to issue a building permit.

- c. **Types of sensitive areas in the Critical Areas Ordinance:** The following is a list of the various types of designated sensitive areas that are protected under the Critical Areas Ordinances of incorporated and unincorporated jurisdictions of Kitsap County:
  1. Shellfish protection districts or shellfish growing areas: Kitsap County has only one shellfish protection district (Burley Lagoon), however the vast majority of Kitsap County’s marine shoreline is recognized or used for either recreational or commercial shellfish harvesting (see <http://www.doh.wa.gov/ehp/sf/Pubs/2005ai-map.pdf> )
  2. Sole source aquifers: No sole source aquifers have been designated by the U.S. EPA in Kitsap County.
  3. Critical aquifer recharges areas: Include Hansville, Seabeck, Island Lake, Gorst, and Poulsbo recharge areas, all listed in the CAO (See **Appendix 2**). These areas and areas within the five year travel time of

large, municipal water wells, are protected as Category I aquifer recharge areas. The primary concern for these aquifers is ensuring adequate groundwater recharge by managing land use to minimize the amount of impervious surface. OSS use in these areas can result in beneficial water quantity management. See the attached map for Category I aquifer recharge areas.

4. Designated wellhead protection areas for Group A public water systems (See **Appendix 2**): Group A wellhead protection areas are regulated by the state Department of Health through WAC 246-290. Protective covenants are required to be recorded and notarized. All applications for new or existing developments are reviewed by the Kitsap County Health District's Drinking Water Program to ensure that all of the state mandated setbacks are met, pursuant to Bremerton-Kitsap County Board of Health Ordinance 1999-6.
5. Upgradient areas affecting water recreation areas designated for swimming in natural waters with artificial boundaries within the waters as described by the Water Recreation Facilities Act Chapter 70.90 RCW. As described in Section 2.A.VIII, Kitsap County Health monitors all public swimming areas in the county. Thirteen lakes with public access in Kitsap County have at least one recreational swimming area.
6. Areas designated by Department of Ecology as special protection areas under WAC 173-200-090: None are designated in Kitsap County.
7. Wetland areas under production of crops for human consumption: Kitsap County is not known to have any of these.
8. Frequently flooded areas including areas delineated by the Federal Emergency Management Agency and or as designated under the Washington State Growth Management Act: These areas are determined and managed by Kitsap County pursuant to Title 15 of Kitsap County Code, "Flood Hazard Areas".
9. Areas where nitrogen has been identified as a contaminant of concern: Hood Canal has been designated an area of special concern for nitrogen. However, in Kitsap County, onsite sewage systems have not been proven, at the time of this writing, to be a significant contributor to the nitrogen problem. Therefore, Hood Canal is not designated as a Marine Recovery Area in the Local Management Plan.
10. Marine Recovery Areas (MRAs, See **Figure 3**) : The Kitsap County Health District is declaring two MRAs. See the following section, 2.A.II.c

## II. Marine Recovery Areas

- a. **"Closed Loop" approach to identifying and prioritizing threatened marine and surface waters:** The Kitsap County Health District is one of four partners in the Surface and Storm Water Management Program that

is managed by Kitsap County Department of Public Works. The Kitsap County Department of Community Development and the Kitsap Conservation District are the other members of the program. Through this program, and the partnership formed by it, the primary agencies responsible for development, and nonpoint source pollution elimination, coordinate activities to enhance and improve Kitsap County's surface and ground water resources. As noted in a Puget Sound Action Team case study report (Puget Sound Action Team Case Study, April 2005), the Kitsap County Surface and Storm Water Management Program is an excellent model of a cooperative partnership, between different agencies, that partially fulfills Growth Management Act program goals to take action to correct sources of nonpoint pollution that harm Puget Sound. Recent water quality successes resulting from this program include the upgrades of several closed or threatened shellfish harvesting areas (Chico Bay area of Dyes Inlet, Port Gamble Bay, and Burley Lagoon).

Through the Surface and Storm Water Management Program, the Health District is funded to implement several OSS/water quality enhancement/public health protection programs:

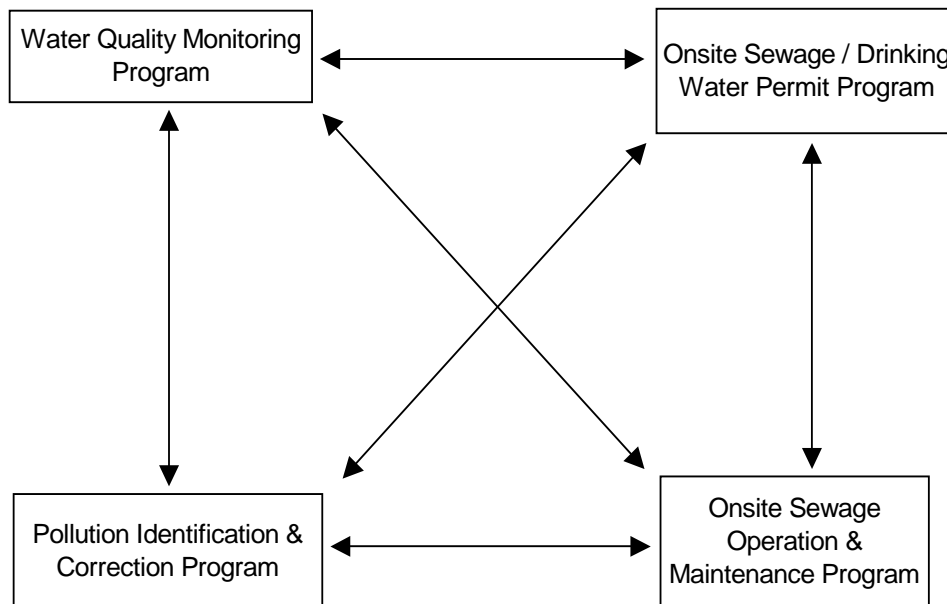
- Onsite Sewage System Complaint Response
- Onsite Sewage System Pollution Identification and Correction
- Marina Sewage Control
- Onsite Sewage Operation and Maintenance
- Sewage Spill Response
- Water Quality Monitoring
- Shellfish Monitoring
- Wellhead Protection

Via the implementation of these programs, the Health District has achieved a "closed loop" methodology for identifying, prioritizing, and correcting areas of poor or declining water quality in unincorporated Kitsap County (**See Figure 1**).

This closed loop approach to water quality protection is the central core of the Health District's Local Management Plan. Each of these programs coordinates not only with each other, but also with appropriate federal, state, tribal, and local agencies to achieve clean water through a data-based approach. Water quality information is gathered and assessed to not only identify problem areas, but to verify water quality improvements in areas that have undergone clean-up efforts (See The Kitsap County Health District Website, 2005-2006 Water Quality Monitoring Report: [www.kitsapcountyhealth.com/environmental\\_health/water\\_quality/docs/MonitoringReportDocs/intro.pdf](http://www.kitsapcountyhealth.com/environmental_health/water_quality/docs/MonitoringReportDocs/intro.pdf))

These programs have been operating successfully in Kitsap County for the past 12 years to the point they already meet most of the intent of the new Local Management Plan and the Marine Recovery Area Act (RCW 70.118A) requirements. The SSWM program (1993) and the passage of both the local O&M (1995) and Onsite Sewage Ordinances (1996) were key elements in Kitsap County being at the forefront of protecting its' water quality through enhanced oversight of OSS.

**Figure 1: Onsite Sewage "Closed Loop" Approach**  
**KITSAP COUNTY HEALTH DISTRICT**  
**ONSITE SEWAGE SYSTEM LOCAL MANAGEMENT PLAN APPROACH**



The following is a brief summary of water quality and shellfish protection accomplishments, since 1995, by the Kitsap Health District through the Kitsap County Surface and Storm Water Management Program and state water quality grants:

- Five polluted shellfish harvesting areas cleaned-up and re-opened: Burley Lagoon, Port Gamble Bay (Cedar Cove), Illahee State Park, North Dyes Inlet. Most of Chico Bay upgraded from "Restricted" to "Approved". Approximately 1800 acres has been re-opened or upgraded since 1996.
- 16 streams and 4 marine embayments showing improving water quality due to pollution identification and correction projections.

- North Kitsap's Dogfish Creek cleaned up. Bacteria levels reduced from 406/100ml in 1996 to 82/100ml. In 2006.
- South Kitsap's Gorst Creek cleaned up. Bacteria levels reduced from 111/100ml in 1996 to 47/100ml in 2006.
- 5435 property surveys and complaint investigation conducted since 1995 leading to corrections of 842 failing OSS.
- Responded to 669 water quality complaints since 1996.
- Completed clean-up project in the Yukon Harbor watershed, corrected 49 failing OSS. Will work with Washington State Department of Health on re-opening this area to commercial and recreational shellfish harvest.
- Responded to low dissolved oxygen problem in Hood Canal by conducting shoreline surveys from the Mason County line north to the Hood Canal Bridge. Through 2006, 25 failing OSS have been identified and 17 have been corrected.
- Currently conducting pollution, identification and correction project in Dyes Inlet to protect and/or restore recreational and commercial shellfish harvesting area.
- Six sewage control devices installed at Kitsap County marinas pursuant to the Health District's Marina Sewage Regulations.
- 44,000 recreational shellfish harvesters protected annually (State estimate) through Paralytic Shellfish Poison (PSP) monitoring and emergency response at 12 public shellfish beaches.
- 14,000 Kitsap County Park users protected annually through lake swimming beach monitoring and emergency response. Twenty-eight beaches on 17 lakes monitored.
- 5743 operation and maintenance contracts now established for alternative onsite sewage systems preventing system failures and impacts to surface waters.
- \$2,000,000 in water quality grants and contracts awarded for pollution, identification and correction projects.
- 525 Group B wellhead surveys conducted since 1995.
- 119 monitoring stations on 58 streams monitored monthly for fecal coliform bacteria, temperature, pH and dissolved oxygen. 67 marine water stations monitored six times per year.

**b. Pollution Identification and Correction (PIC) Priority Area Worklist:**

In Kitsap County, as elsewhere, surface water quality provides an early warning in determining whether development, land uses, and other human activities are being managed to effectively protect public health and the environment. The Health District uses fecal coliform bacteria as the primary indicator of nonpoint pollution when evaluating surface water quality. Sources of fecal water pollution in Kitsap County include human sewage (failing OSS, combined sewer overflows, sewage spills,

and sewage discharges from boats.) and animal waste (inadequate livestock keeping practices, inadequate pet waste management and wildlife waste).

SSWM authorized the Health District to develop the Pollution Identification and Correction Program (PIC) to address fecal coliform pollution from human and animal waste sources. The PIC program uses water quality monitoring data and public access to identify priority water bodies for cleanup. The PIC program combines a PIC Priority List ranking system, established PIC Protocols (approved by Washington State Department of Health, and Washington State Department of Ecology), strong public outreach and education, and enforcement capability under local onsite sewage and solid waste regulations.

Each year, the Health District publishes a detailed priority area work list ranking based on potential health risks for public exposure and water quality monitoring from the state DOH and DOE and from data collected by the Health District's SSWM Water Quality Trend Monitoring Program. **See Appendix 5: 2008 Priority Area Work List for the Pollution Identification and Correction Program; Table 2 2008 Project area Work List. See also on the Kitsap County Health District website:**

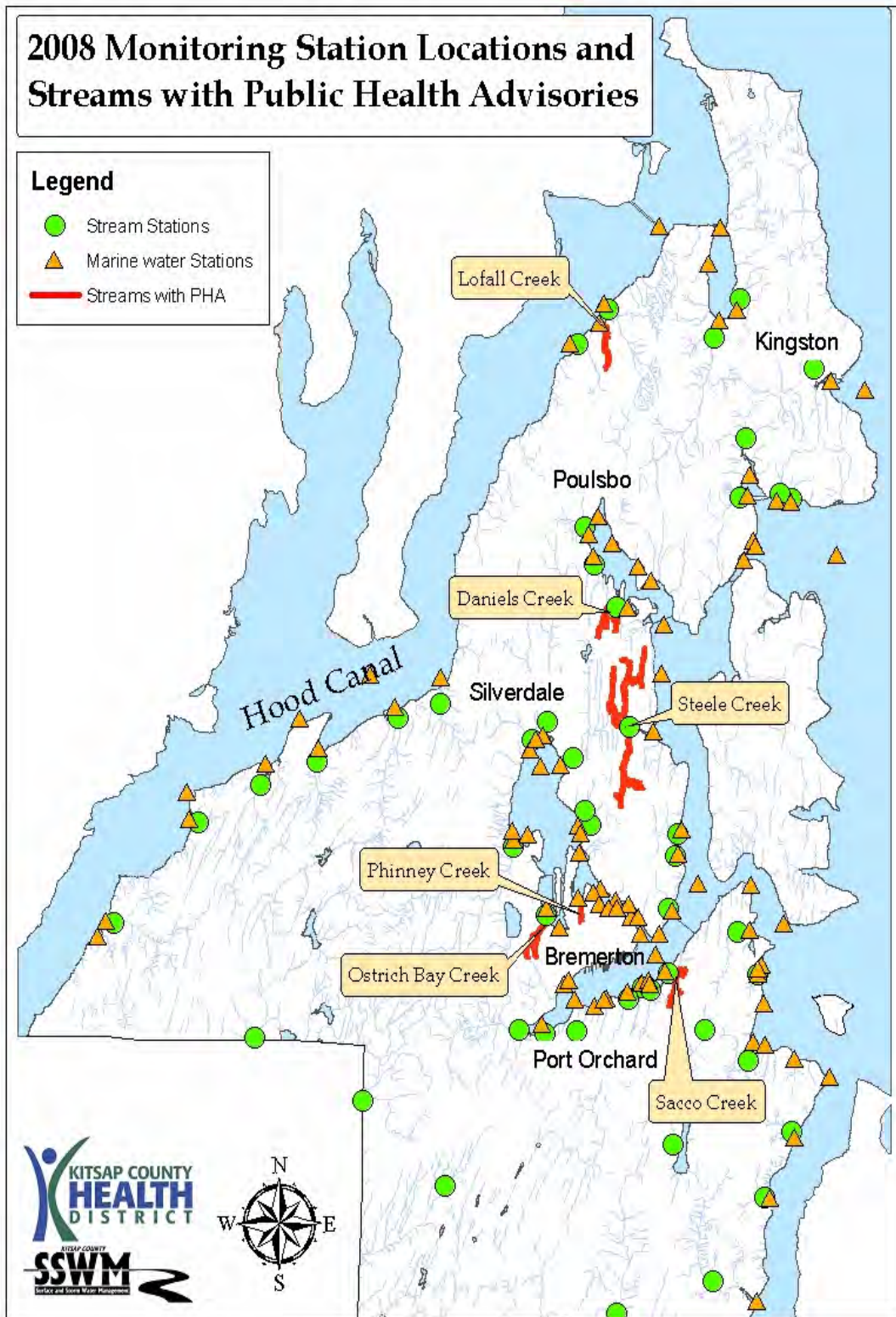
[www.kitsapcountyhealth.com/environmental\\_health/water\\_quality/docs/pic\\_priority\\_list.pdf](http://www.kitsapcountyhealth.com/environmental_health/water_quality/docs/pic_priority_list.pdf)

The District submits grant applications for the highest ranked project areas in order to maximize program coverage.

The PIC program has been successfully identifying and correcting OSS failures in Kitsap County for twelve years. The program focuses resources in DOH shellfish closure and downgrade areas, surface and marine waters listed on the DOE 303 (d) list and to a greater extent those areas shown by ongoing Health District water quality trend monitoring to have water quality problems (See **Figure 2 Monitoring Station Locations and Streams with Public Health Advisories**). These areas have changed over time. Some areas, like Burley Creek, experienced improved water quality related to successful PIC projects and are being addressed again because water quality declined. PIC also maintains close communication and coordination with Washington State Department of Health Shellfish Program (Health). Health notifies PIC for investigation when high fecal coliform counts are found along Kitsap's shorelines.

PIC parcel surveys provide parcel-specific recommendations for owners and residents to get the most life possible from onsite sewage systems, while preventing fecal and nutrient pollution. SSWM funding allows

Figure 2: 2008 Monitoring Station Locations



continued technical support after PIC projects, funded by grants, are completed. This allows the District to respond to water quality concerns from PIC area residents long after a project has been completed

The Health District's 2005-2006 Water Quality Monitoring Report can be found on the Kitsap County Health District's website:  
[www.kitsapcountyhealth.com/environmental\\_health/water\\_quality/docs/MonitoringReportDocs/intro.pdf](http://www.kitsapcountyhealth.com/environmental_health/water_quality/docs/MonitoringReportDocs/intro.pdf)

A general summary of this information is contained in **Figure 3**.

Surface and ground water quality is particularly important to Kitsap because, like an island, it relies on groundwater for drinking water. The county's streams are comparatively short, allowing surface pollutants picked up by storm water to move rapidly to marine waters.

The Health District enforces sources of fecal pollution through local and state onsite sewage and solid waste regulations.

- c. **Evaluation and identification of threatened marine shorelines for designation as a Marine Recovery Area:** Pursuant to the criteria contained in RCW 70.118A.040, and the current data and programs discussed below, the Kitsap County Health District is designating **Burley Lagoon** and **Liberty Bay** as Marine Recovery Areas at this time (**Figure 4**). Although Dyes Inlet and Hood Canal each met one of the criteria for consideration, OSS are not a significant factor contributing to their water quality issue at this time. The Health District has made this determination by evaluating each marine area in Kitsap County with regards to criteria contained in RCW 70.118A.040:

- Shellfish areas listed as Threatened or Downgraded by the state Department of Health; or
- Marine waters listed on the state Department of Ecology's 303(d) List for being impaired due to dissolved oxygen or fecal coliform; or
- Marine waters where nitrogen has been identified as a contaminant of concern; and
- Onsite sewage systems are a significant factor contributing to one of these issues;

and the following information:

- Washington State Department of Health's 2007 Early Warning System Summary for Shellfish Growing Areas in Kitsap County;
- Washington State Department of Health's 2006 Shellfish Growing Area Annual Reports;

Figure 3: Summary of Fecal Coliform Bacteria Sampling Results

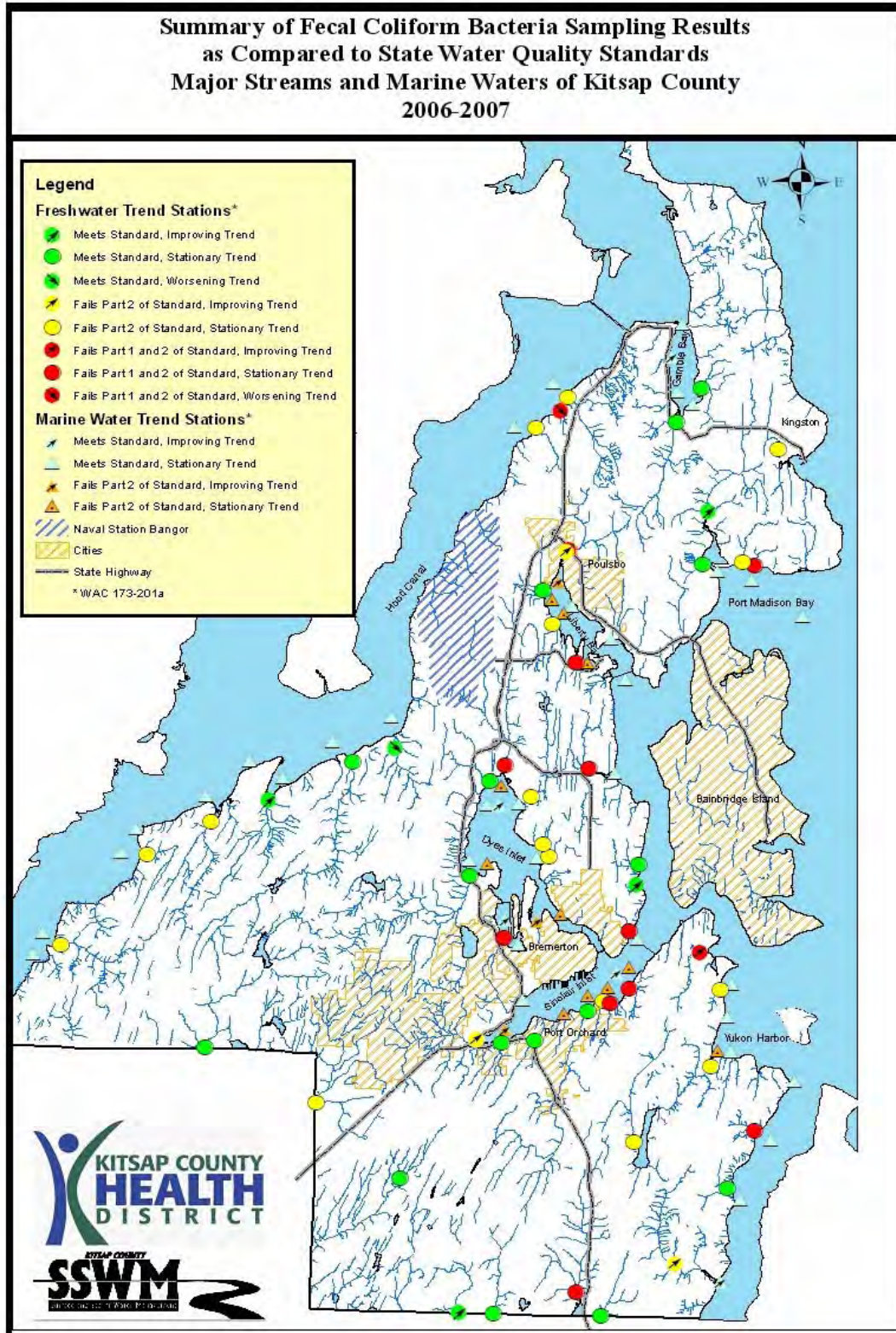
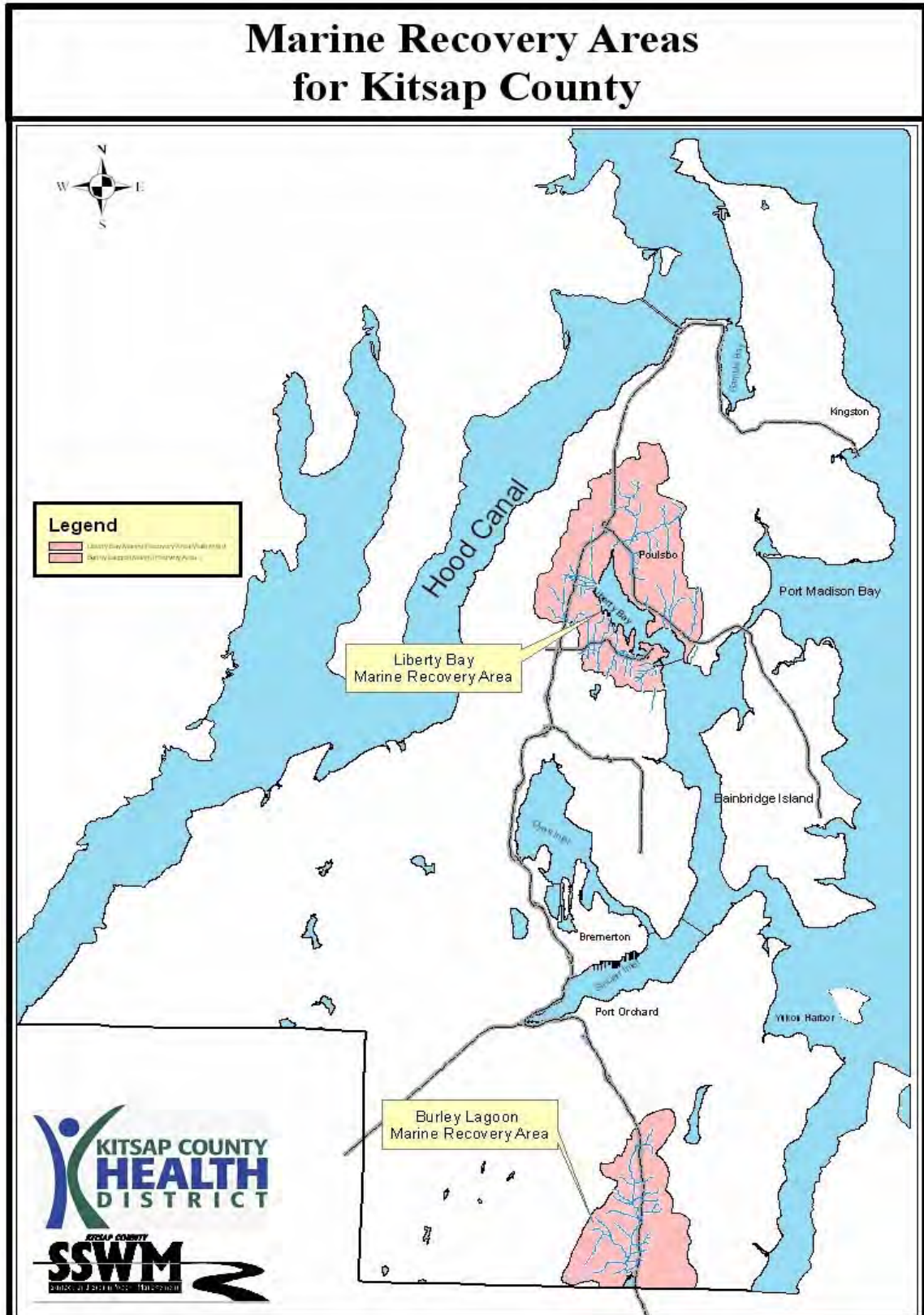


Figure 4: Marine Recovery Areas for Kitsap County



- Washington State Department of Ecology's 2004 Integrated Water Quality Assessment;
- Hood Canal Dissolved Oxygen Program data through 2007;
- Kitsap County Health District 2005-2007 Water Quality Monitoring data; and
- Kitsap County Health District's 2007 Priority Area Work List for the Pollution Identification and Correction Program.

A summary of the evaluation criteria is contained in **Table 1**. A discussion follows on the evaluation process used in designating a threatened area as a Marine Recovery Area.

1. **Hood Canal:** Nine marine water stations in the Kitsap County portion of Hood Canal have been listed on the 303(d) List by the Department of Ecology as impaired for dissolved oxygen. Four of these stations are listed based on Kitsap County Health District nearshore, shallow, inter-tidal data from 1998 collected during warm-water summertime conditions, and the remaining five are listed based on deep water samples collected by the Hood Canal Dissolved Oxygen Program. Three of the five HCDOP listed stations are within the U.S. Naval Sub Base Bangor complex area which is served by public sewer (Central Kitsap Wastewater Treatment Plant at Brownsville).

The Kitsap County Health District has submitted to Ecology withdrawal requests for the four shallow, nearshore stations (Lofall, Vinland, Seabeck, Holly/ Anderson Coves) based on its analysis and familiarity with the data used to make the listing. Ecology has rejected this request based on a staff memo (Grantham, 2005). The Health District has requested to review the criteria used by Ecology, but Ecology has yet to furnish this information.

These stations are located in the intertidal area, between the +12 feet and +5 feet tidal marks, and the dissolved oxygen readings were obtained in the upper 12 inches of water column. During low tide conditions, no water is present in these areas. During the summer, due to solar radiation, water temperatures frequently rise above 75 degrees F in these intertidal areas. Warmer water cannot hold sufficient dissolved oxygen as compared to the state water quality standards during these seasonal conditions, and at the location and depth that the dissolved oxygen reading was collected. Ecology staff have never discussed these results with the Health District. The Health District believes that Ecology staff are in error, and that Ecology staff should provide data analysis to support their decision.

**Table 1: Summary of Marine Recovery Area Review of Kitsap County**

Marine Area	Shellfish Area Threatened or Downgraded by DOH?	303(d)-Listed for Fecal Coli. or Low Dissolved Oxygen?	Nitrogen a Contaminant of Concern?	Onsite Sewage Systems a Significant Factor?	Designate as a MRA?
Admiralty Inlet/Puget Sound (Foulweather to Pt. Jefferson)	No	No	No	NA	No
Burley Lagoon - Kitsap County	No	No	No	NA	<b>Yes**</b>
Colvos Passage	No	No	No	NA	No
Dyes Inlet	<b>Yes</b>	No	No	<b>No</b>	<b>No**</b>
Hood Canal	No	<b>Yes (DO)</b>	No	<b>No</b>	<b>No**</b>
Liberty Bay	No	<b>Yes (FC)</b>	No	Possibly	<b>Yes**</b>
Miller Bay	No	No	No	No	No
Port Gamble Bay	No	No	No	No	No
Port Madison	No	No	No	No	No
Port Orchard Passage	No	No	No	No	No
Puget Sound (East Bainbridge Island)	No	No	No	No	No
Sinclair Inlet	No	<b>Yes (DO)</b>	No	No	No
Yukon Harbor	No	No	No	No	No

\*\* - See Explanation in Text.

The three HCDOP stations within the Bangor complex should not be attributable to OSS because the Bangor complex is connected to public sewer; the wastewater treatment plant that receives Bangor’s sewage is located in Brownsville, which is located on the opposite side of the Kitsap Peninsula (Port Orchard Bay).

The Kitsap County Health District recently conducted an OSS sanitary survey of developed land parcels on the Hood Canal shoreline (2005-2007). A total of 760 residences were within the survey area. In this survey, drainages and pipe discharges to the beach were sampled. Those samples that had fecal coliform counts of over 200/100ml were tracked back to residences, which were then sampled and dye tested to determine the state of the OSS. As a result, 26 failures were found (failure rate of 3%). Twenty-four (24) of the failures have been repaired/ replaced, and the remaining two failures are in the process of being corrected. Despite these few failures, Hood Canal water quality is excellent and has met the state fecal coliform standard in Kitsap County for over 12 continuous years.

Onsite sewage systems are not a significant factor contributing to these dissolved oxygen problems at this time.

Additionally, based on the sanitary survey data, which included nitrogen sampling, and current HCDOP data for nitrogen levels in Hood Canal, there does not appear to be any link at this time between nitrogen levels in Hood Canal and OSS in Kitsap County. Therefore the Kitsap County portion of Upper Hood Canal will not be designated as a Marine Recovery Area for low dissolved oxygen or nitrogen concerns at this time.

The Health District will reassess this determination if data becomes available in the future which shows significant terrestrial-based nitrogen discharges to Hood Canal, resulting in dissolved oxygen depletions, from the Kitsap County shoreline.

In the meantime, the Health District is continuing to expand its OSS sanitary survey work in Hood Canal. In addition to the shoreline survey work currently underway, the Health District is surveying properties bordering Lofall Creek and Jump off Joe Creek. The Health District is also planning on conducting surveys along Kinman Creek and in the Vinland area. This work will most likely start in winter 2009.

2. **Liberty Bay:** Three marine water stations in Liberty Bay have been listed as impaired for fecal coliform by Ecology and are listed on the 303(d) list: one near the mouth of Johnson Creek in the northwest corner of the bay, one near Pearson Point/Dogfish Bay in the southern end of the bay, and one near Lemolo in the southeast corner of the bay. **See Figure 5: Liberty Bay Marine Recovery Area.**

Current Kitsap Health marine water quality data from two of these areas (Johnson Creek and Pearson Point/Dogfish Bay) is also in violation of state fecal coliform standards. Additionally, three of the four stream monitoring stations in these two areas also exceed state water quality standards for fecal coliform (Big Scandia, Little Scandia, and Daniels) both currently and historically. Johnson Creek, though currently meeting the standard, has violated the standard for the last 8 of 11 years.

All four of these stream basins are listed as Pollution Identification and Correction (PIC) priority areas due to these ongoing fecal coliform pollution issues. Because these areas are also primarily residential with OSS; a good portion of the development is older (more than 20 years); and the area is known to have a seasonal high water table in many

locations, there is a strong probability that failing or inadequate OSS may be a significant cause of the fecal coliform listings and violations.

Therefore Liberty Bay will be designated as a Marine Recovery Area.

3. **Sinclair Inlet:** One marine water station near the head of Sinclair Inlet has been listed on the state 303(d) List for impairment of dissolved oxygen. This listing, as with four of the Hood Canal listings, is based on Kitsap Health nearshore data.

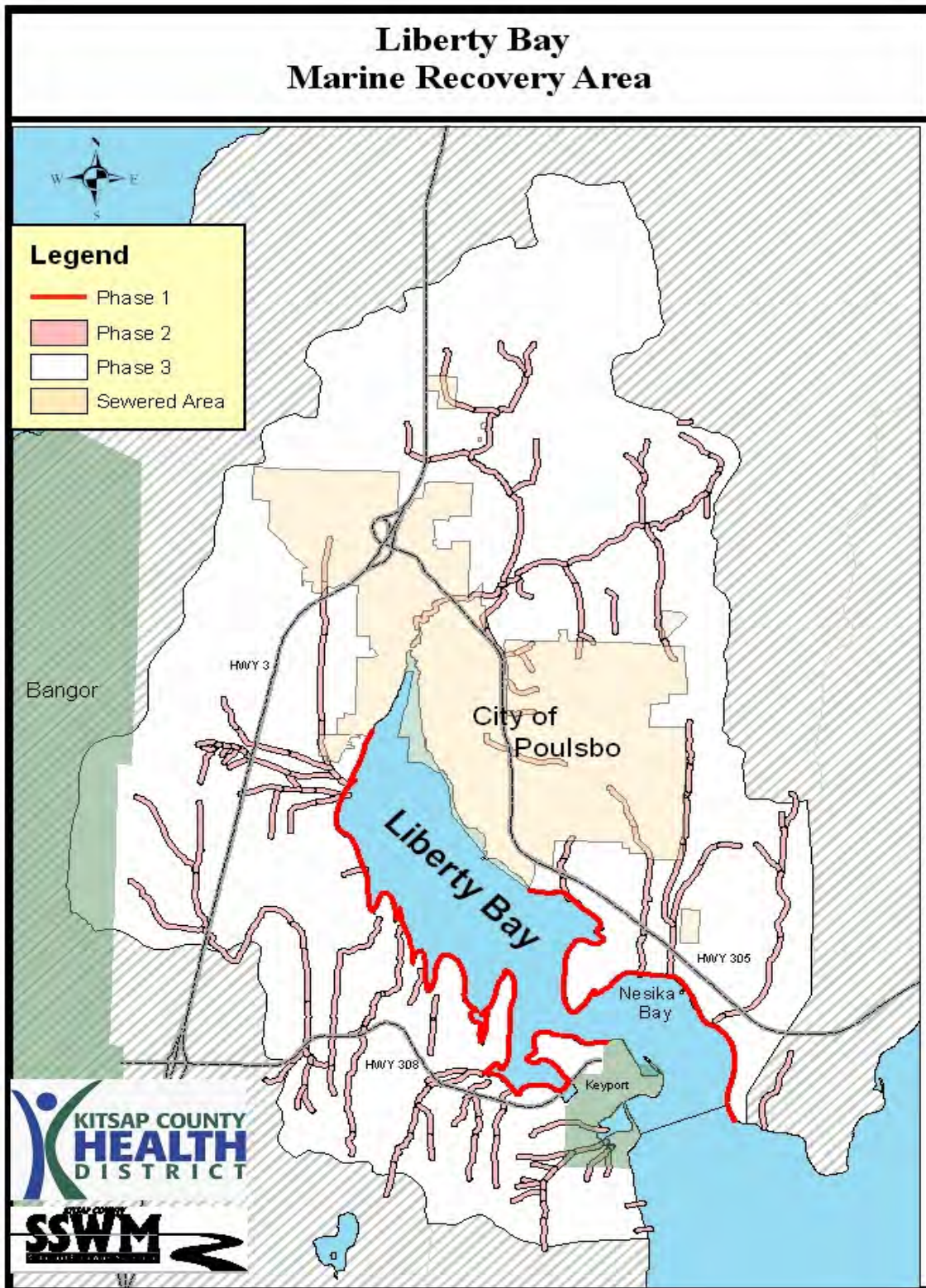
This marine water station is located within a substantial tide flat that does not contain water unless it is high tide. There are no residences near this station, and it is located immediately adjacent to Highway 3. During warm, summer weather conditions, water temperatures routinely exceed 75 degrees F, making it difficult to meet the dissolved oxygen water quality standard. Incidentally, the rest of Sinclair Inlet meets the dissolved oxygen standard. As with the Hood Canal stations discussed above, the Health District has requested removal of this station from the 303(d) list. However, Ecology has not acquiesced to this request nor provided data analysis to support their position.

Therefore, the Health District has determined that OSS are not a significant factor contributing to the 303(d) listing of low dissolved oxygen for this station, and will not designate Sinclair Inlet as a Marine Recovery Area.

4. **Dyes Inlet:** The Midwestern portion of Dyes Inlet has been listed as a Threatened Shellfish Area by the Department of Health. The Dyes Inlet Watershed is currently being investigated by the Kitsap County Health District through a state grant to identify and correct fecal coliform pollution sources, and a sanitary survey of the OSS along the western shoreline of Dyes Inlet – immediately adjacent to the threatened shellfish area- was completed in Fall 2007. No shoreline failures were identified, and the single upland failure was corrected. This information has been forwarded to the Department of Health Shellfish Program.

During Winter/Spring 2008, the Health District will be conducting a sanitary survey of the Erland's Point area, also as part of the Dyes Inlet clean-up grant.

Figure 5: Liberty Bay Marine Recovery Area



Therefore, data and investigations suggest that OSS are not a significant factor relating to the threatened shellfish status of mid-western Dyes Inlet, and consequently Dyes Inlet will not be designated as a Marine Recovery Area at this time. However, based upon the results of the pollution source investigation work to be completed over the next year, the Health District will reassess this determination as needed.

5. **Burley Lagoon:** Although Burley Lagoon is also currently listed as a threatened shellfish area by Department of Health, none of the threatened monitoring stations are in the Kitsap County portion of the Lagoon (they are located in Pierce County), and there are no classified shellfish areas in the Kitsap County portion of the Lagoon. **See Figure 6: Burley Lagoon Marine Recovery Area.**

However, Burley Creek is the major freshwater tributary to Burley Lagoon, the Burley Creek watershed resides primarily in Kitsap County, and the Burley Creek watershed remains as one of the Kitsap Health District's highest priorities, as it has since the late 1980's, due to reoccurring fecal coliform problems. The Health District maintains an active presence in the Burley Creek watershed on a continual basis through the Surface and Storm Water Management Program, and Burley Creek is a prioritized area in the Pollution Identification and Correction Work List because of historical problems with OSS and marginal soil conditions for OSS in many areas of the watershed.

Burley Lagoon is also part of a Pierce County-designated Marine Recovery Area.

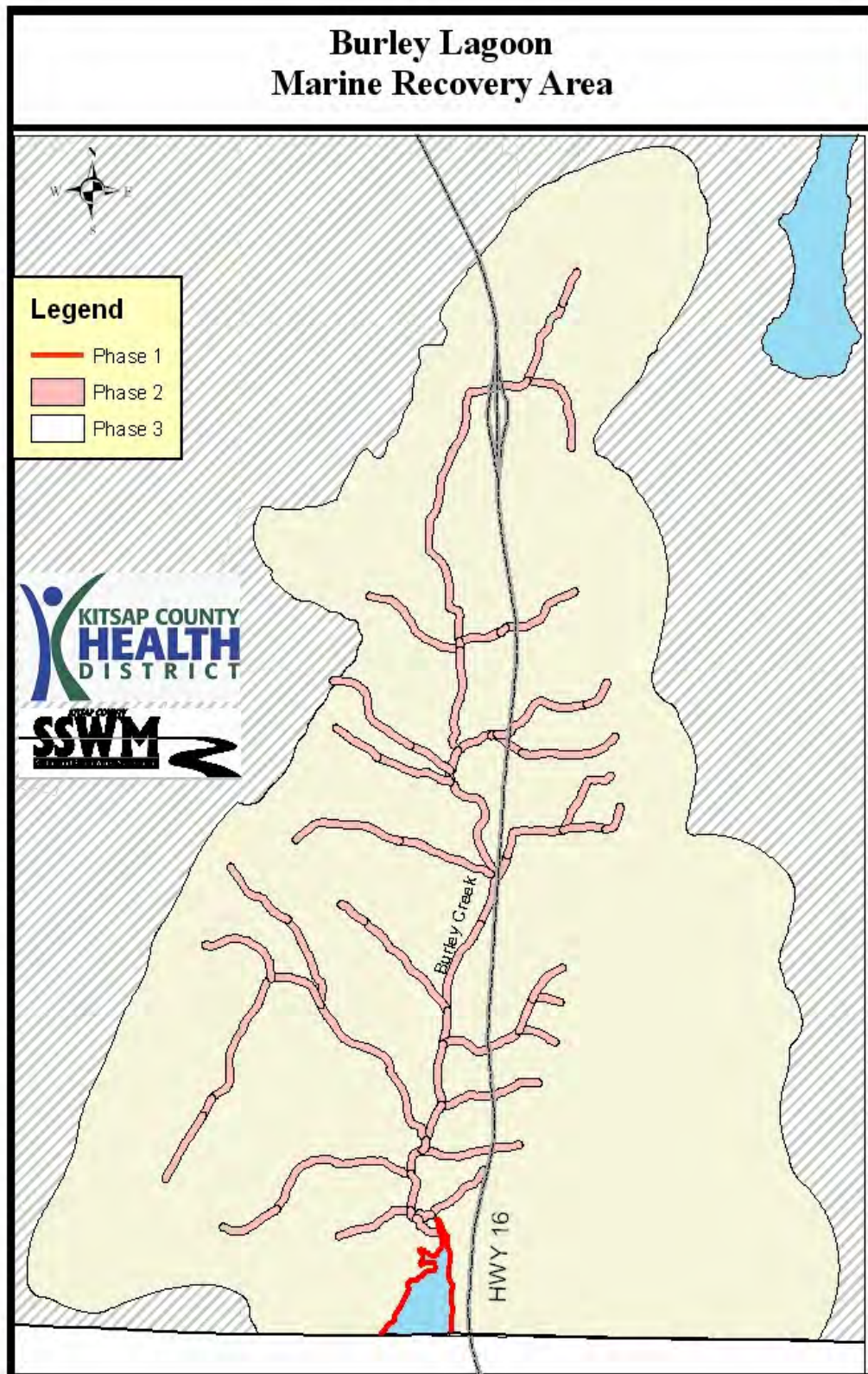
Therefore, the Health District is designating Burley Lagoon as a Marine Recovery Area at this time. A sanitary survey project of the lower Burley Creek is planned to begin Summer 2008.

## **B. Inter-jurisdictional Coordination**

### **I. Stormwater Utility and Water Quality**

The Puget Sound Action Team case study of the program notes that the Surface and Stormwater Management Program (SSWM) is an excellent model of a cooperative partnership that fulfills the growth management goals to develop a comprehensive stormwater management program and take action to correct sources of nonpoint pollution that harm Puget Sound.

Figure 6: Burley Lagoon Marine Recovery Area



The Kitsap County Public Works Department (Public Works) manages the SSWM program. Four agencies carry out program activities: Public Works and Kitsap County Department of Community Development (DCD) are under the authority of the county board of commissioners. The Kitsap County Health District (Health District) is governed by a board of health composed of ten elected officials: Three (3) county commissioners; four (4) mayors representing the four incorporated cities/towns in the county and; two (2) councilmen from Bremerton and one (1) from the City of Bainbridge Island. The Kitsap Conservation District is governed by a local board of supervisors, under the authority of Washington Conservation Commission. SSWM created a structure within the existing system that encourages all the agencies to communicate with each other, allowing effective cooperation (PSAT Case Study, April 2005).

Kitsap County's SSWM program provides the necessary elements for a successful countywide water quality program. The SSWM program provides the political will and stable funding, PIC provides standard procedures and effective water quality education, and the Health District's onsite sewage and solid waste regulations provide enforcement capability.

## **II. Coordination with Planning and Other Agencies in Preparation and Enforcement of the Comprehensive Land Use Plan**

- a. **Health District/city and county planning roles in developing and implementing comprehensive plans:** Kitsap County and the four cities within the county, develop and update their Comprehensive Plan and Critical Areas Ordinance (CAO) pursuant to Washington State RCW 36.70A "Growth Management". Kitsap County's most recently updated their plan in December 2006. It includes goals and policies designed to guide future growth in a way that minimizes the impact to the county's natural environment. Development impacts are minimized primarily with development regulations. The Health District is included at interagency meetings and/or is involved in the review and comment of the various drafts of the Comprehensive Land Use Plan. The Health's District purpose is to provide technical assistance and guidance to ensure onsite sewage, water quality, drinking water and solid and hazardous waste regulations are appropriately adhered to in the plans.
- b. **Coordination between cities and county in developing and enforcing the Critical Areas Ordinances:** Key elements of natural systems are regulated as critical areas, including geologically hazardous areas, critical aquifer recharge areas, wetlands, frequently flooded areas, and fish and wildlife conservation areas. The Natural Systems chapter of Kitsap County's Comprehensive Plan provides a series of goals, objectives and

policies to guide future growth in a manner that protects public safety and health and maintains drinking and surface water quality while preserving the natural environment. The Land Use chapter directs intense development away from sensitive areas. The Shoreline chapter protects and enhances water quality by safeguarding shoreline resources by only allowing development compatible with sensitive shoreline areas.

The various city and county Comprehensive Plans include a number of sections that protect water quality. The related goal is to protect the water quality, flows and ecological integrity of rivers, streams, lakes, wetlands, Puget Sound and Hood Canal by appropriately regulating stormwater and land use while allowing for compatible growth and development. Kitsap County's Critical Areas Ordinance (CAO), revised December 2005, notes that Kitsap County is located in a unique part of Washington State between the urban areas of Seattle and Tacoma and the wilderness of the Olympic Mountains. The ordinance goal is "that the beneficial functions and values of critical areas be preserved, and potential dangers or public costs associated with the inappropriate use of such areas be minimized by reasonable regulation of uses within, adjacent to or directly affecting such areas, for the benefit of present and future generations.

The Countywide Surface and Stormwater Management Program also protects wetlands, fish and wildlife habitat areas, geologically hazardous areas, frequently flooded areas and critical aquifer recharge areas by improving runoff water quality and reducing runoff flow rates.

- c. **Permit coordination between county and city departments of community development and the Kitsap County Health District:** The Health District and the City and County Planning and Building Departments, specifically, City of Bainbridge Island and Kitsap County, have been working cooperatively for many years to streamline development regulations, and to cooperatively protect water quality. A Health District OSS inspector is housed at the Kitsap County Department of Community Development daily and another part time at the Planning and Development Department on Bainbridge Island to provide triage on land use and other developments, as well as provide technical assistance on permitting issues to customers, planners and building inspectors.

The two agencies have developed coordinated policies for permit applications including: Universal Building Site plot plan requirements, which include critical area and building limitation requirements, Recreational Lot Policy, and Concurrent Review. Existing OSS in Kitsap County are frequently replaced, or upgraded, to current codes when a

building permit is needed to expand a residence or business, or change the use of a property. The local building departments of Kitsap County will not issue building permits, or change land use designations, without the review and approval of the Kitsap County Health District for sewage control and water supply. The Health District's review and approval are mandated under existing Board of Health and building department regulations.

- d. **Other coordinated efforts to protect the environment:** In addition to the CAO, Kitsap County is protecting the functions and values of critical areas through the following regulatory and non-regulatory measures:
  1. **Wetlands:** Wetlands (See Appendix 3) are also protected through SSWM, which improves runoff quality and reduces runoff flow rates; through the county GIS, which identifies and maps wetlands for monitoring and protection; through the encouragement of community groups to sponsor professional local wetlands inventories; through cooperation with Washington State University Extension program which provides agricultural and forestry technical assistance; through coordination with the Kitsap County Health District, which conducts onsite sewage inspections, boater waste reduction and other source control related activities; and through Kitsap Conservation District and the County's Stream Team, which implements voluntary water quality and habitat improvement projects.
  2. **Geologically Hazardous Areas:** Geologically Hazardous Areas (See Appendix 4) are protected through SSWM, which improves runoff quality and reduces runoff flow rates; and through GIS, which identifies and maps Geologically Hazardous Areas.
  3. **Critical Aquifer Recharge Areas:** Critical Aquifer Recharge Areas are protected through low-density land use designations on the Kitsap Comprehensive Plan Land Use Map and corresponding zoning designations.
  4. **Other Non-regulatory Efforts:** Kitsap County enhances natural system protection through non-regulatory efforts like open space planning and acquisition, salmon recovery and water resources monitoring, planning and project implementation.

### C. State Environmental Policy Act Review:

See **Appendix 6** Environmental Checklist

### D. Resources

#### I. Personnel

No additional personnel are needed at this time to proceed with the 2008 Priority Area Work List for the Pollution Identification and Correction Program (See **Appendix 5**).

## **II. Consultants**

No consultants are needed to assist with MRA designation due to the data and work already completed by the Kitsap Health District as identified above.

## **E. Timeline**

See **Appendix 5**, 2008 Priority Area Work List for the Pollution Identification and Correction Program.

## **F. Goals/Challenges**

### **I. Onsite Sewage System Repair Assistance:**

Onsite Sewage System repairs are becoming more complex as older non-permitted systems and non-conforming systems fail. These repairs can be very expensive to landowners, especially those living along the shorelines. Some landowners have owned their property for decades and have watched as land values shot up around them. Increased property taxes combined with expensive onsite septic repairs has resulted in some individuals living on fixed incomes in trading retirement funds for OSS repairs.

ShoreBank Enterprise Cascadia, a non-profit organization with cooperation of public and private organizations, offered a low interest loan program directed at low-income property owners in Kitsap, Mason and Jefferson Counties. ShoreBank has obtained the necessary resources to finance approximately 1,000 loans within the three county area. The ShoreBank Septic Loan offers a low cost, no hassle loan that covers 100% of the septic system repair or replacement costs.

### **II. Water Quality Protection**

Utilize effective existing programs to provide a basis for comprehensive water quality protection and restoration. Use public funds effectively by utilizing all available resources.

### **III. Sanitary Survey Follow-up Action**

Find funding to allow quicker follow-up of shoreline hotspots.

### **IV. Sewer Extensions**

Find funding to help with sewer extension projects where onsite sewage disposal systems are not feasible.

#### **V. O&M for Mobile Home Parks**

Work with mobile home parks to develop OSS operation and maintenance plans to find ways to mitigate the challenges of older, un-metered systems. If connection to public sewer is feasible, encourage voluntary connection, or require connection when a pattern of OSS failure is established.

#### **VI. Pump Report Submittal and Data Entry**

Find funding to review all pump reports and file by tax identification number.

#### **VII. Surface and Stormwater Program for Incorporated Areas of Kitsap County**

Work with cities to obtain funding for development and implementation of a Surface Stormwater Management Program similar to Kitsap County's existing program.

#### **G. References**

Kitsap County, 10-Year Comprehensive Plan Update, December 2006

Kitsap County, Ordinance Regarding Growth Management, Revision to Title 19 (Critical Areas), December 1, 2005.

Kitsap County Health District, Factors Effecting Health Disparities in Kitsap County, an assessment based on data from the U.S. 2000 census and vital statistics, September 2004.

Kitsap County Health District, 2005-2006 Water Quality Monitoring Report, December 2006

Puget Sound Action Team, Kitsap County Surface and Stormwater Management Program, A Case Study, April 2005.

Washington State Department of Natural Resources, Soil Survey of Kitsap County Area, Washington

Washington State Department of Ecology, "Kitsap County Initial Basin Assessment", October 1997. <http://www.ecy.wa.gov/pubs/oftr974.pdf>

Washington State Department of Health, Shellfish Programs, 2007 Early Warning System Summary for Shellfish Growing Areas in Kitsap County

Washington State Department of Health, Shellfish Programs, 2006 Shellfish Growing Areas Annual Report

Washington State Department of Ecology, 2004 Integrated Water Quality Assessment

## **PART 3 – OPERATION, MONITORING & MAINTENANCE IN SENSITIVE AREAS**

### *Activities*

#### **A. Current O&M Requirements Common to All Areas Throughout the LHJ**

##### **I. Background of Existing O&M Program.**

The Washington State Board of Health adopted Chapter 246-272, Washington Administrative Code (WAC) in March of 1994 with a January 1, 1995 effective date. Section 15501 of the WAC entitled “Operation and Maintenance” specified new requirements for homeowners and local Health Officers regarding the operation, maintenance and monitoring of all OSS by January 1, 2000. In addition, Section 11501 2(f) of the WAC, stipulated that any OSS that could not comply with a three (3) foot vertical separation between the bottom of the drainfield trench and any impervious material or high seasonal water table would have to be designed with something other than a standard gravity system. Based on these two changes in the WAC, the Health District began to develop a local ordinance pertaining to operation and maintenance of OSS. In October of 1995 the Bremerton-Kitsap County Board of Health adopted Ordinance 1995-14, Rules and Regulations for the Operation and Maintenance of Onsite Sewage Systems, and made them effective on January 1, 1996.

Ordinance 1995-14 had the following phased implementation schedule for O & M:

- January 1, 1996, all new alternative septic systems, repairs of existing alternative systems and the re-sale of homes with alternative systems are required to have O & M;
- January 1, 1998 all alternative systems serving shoreline homes and homes that were granted waivers from meeting horizontal setback distances from

septic systems to wells or surface water will be required to have O & M;  
and

- By January 1, 2000 all pre-existing alternative systems will require O&M.

Since January 1, 1995, the Kitsap County Health District has had an O&M program. Additional O&M requirements were included in Bremerton-Kitsap County Board of Health Ordinance 1996-8, Rules and Regulations Governing Onsite Sewage Systems, which became effective May 1, 1996. Since that time the Kitsap County Health District has been refining and improving the O&M program. On July 1, 2007, Chapter 246-272A, Rules and Regulations Governing Onsite Sewage Systems became effective. To comply with new more stringent state Board of Health OSS requirements, including O&M, the Kitsap County Health District developed local Ordinance 2008-1. The Ordinance was adopted by the Kitsap County Board of Health on March 4, 2008 and became effective on May 1, 2008.

The O&M program currently has 3.5 FTEs with a budget of \$355,000. Revenues to support the program are derived from several different source: Approximately \$50,000 is derived from the county Surface and Stormwater Management Program (SSWM); \$280,000 from fees submitted with annual O&M reports from certified O&M contractors in the county who service over 5700 contracted alternative systems and; \$25,000 from septage tipping fees received from Kitsap County Public Works main sewage treatment facility in Brownsville.

## II. Current O&M Requirements from Ordinance 2008-1

(See Ordinance 2008-1, Section 13: Requirements for the Use, Monitoring, and Maintenance of Onsite Sewage Systems, Pages 68-79, at the Kitsap County Health District Website:

[http://www.kitsapcountyhealth.com/environmental\\_health/onsite/docs/KCBOHO2008-01.doc](http://www.kitsapcountyhealth.com/environmental_health/onsite/docs/KCBOHO2008-01.doc)

### a. Homeowner responsibility

#### 1. Standard Gravity Systems:

- (a) Protect the OSS area and reserve area from activities that would adversely impact the OSS, i.e. encroachment and/or covering by structures or impervious material, surface drainage, placement of wells and ponds, soil compaction, vehicular traffic, livestock and removal of soils.
- (b) Ensure that all waste material atypical of residential waste strength are kept out of the OSS, including use of chemicals for cleaning and

sewage system additives, unless specifically approved by the Health Officer

- (c) Ensure a complete evaluation of the OSS components and /or property to determine functionality, maintenance needs, and compliance with applicable regulations or permits, and report this information to the Health Officer, on forms of by means designated by the Health Officer every three years.
- (d) Cause the contents of the septic tank to be pumped by a licensed pumper when said levels of solids and/or scum indicate that removal is necessary. Provide repairs to the tank and other components of the onsite system which are noted as necessary in the inspection report required by Section 6.A.3. below. (Note: Repair Permits are required).
- (e) Submit report of said inspection to the District on forms provided by the District. The report may be completed by the homeowner or a certified pumper hired by the homeowner.

**2. Alternative Systems:**

- (a) Alternative systems, which are defined as any OSS other than a standard gravity system, vary in design and require a higher level of scheduled O&M. Generally resident owners are unfamiliar with O&M requirements and, therefore, alternative system owners must have an O&M contract signed by a certified Onsite Maintenance Specialist prior to final approval of the OSS or within (30) days of occupancy (within 30 days of occupancy was amended in Ordinance 2008-1 to required at time of final sewage permit approval). Specific alternative system O&M requirements will be a condition of sewage permit approval.
- (b) The O&M contract must include but is not limited to the following:  
The names of the parties entering into the contract, property identification (i.e. property address, tax assessor account number), type of OSS, O&M to be performed, responsibilities of the maintenance specialist and responsibilities of the homeowner (i.e. compliance with instructions in the O&M manual, notification of any problems with the OSS, right of entry to Health District personnel or the Maintenance contractor to inspect and service, notification if the residence is to be sold or rented to new tenants).

**b. Maintenance Specialist responsibility:**

- 1. **Conventional standard gravity:** Homeowners are generally responsible for ensuring O&M, however, in the event a contract with a certified Maintenance Specialist is required due to its risk level in an MRA, sensitive area or due to site conditions and/or age of the system, it will be required that it comply with requirements specified on the

Sewage Permit and with requirements listed in item 2 below for alternative systems.

2. **Alternative OSS:** The Maintenance Specialist is responsible for performing the following:
  - (a) Perform at a minimum, all tests and inspections as specified in the owner operator manual and with the Health District;
  - (b) Submittal of an annual maintenance report to the Health District within 30 days following completion of all servicing for the previous year accompanied with appropriate Health District fees;
  - (c) Respond to complaints in a timely manner;
  - (d) Notify the homeowner and Health District within seven working days in the event of an onsite system failure;
  - (e) Notify the Health District within 30 days of an ownership change of the property or building or an O&M contract expiration or cancellation or as directed by the Health Officer.
3. **STEP Systems:**

STEP (Septic Tank Effluent Pumping) sewer systems utilize septic tanks at each home for sewage collection. Solids sink to the bottom of the tanks for removal at a later date. Liquids are pumped in pressurized collector pipe systems to a central location and subsequently to publicly owned gravity pipe systems. The original policy intent of STEP systems was to provide a sewer alternative in challenging topography that would otherwise require deep and costly trenches for gravity sewer systems. STEP systems will be maintained in accordance with standards of the entity providing sewage disposal, i.e., sewer district. Generally the septic tank of a STEP system will need pumping when sludge and/or scum levels exceed recommended Department standards.
4. **Product Development Permit** (Replaces Experimental System in previous WAC):

The Health Officer may issue a product development permit (PDP) for any proprietary treatment component or sequence. In order to protect public health during the development period, a complete system meeting the requirements of this chapter and the site must be installed. The product under development may then be added to the treatment system allowing the product developer to gather data about the product's performance in the field. The PDP allows product developers to explore and develop new technologies prior to product testing and registration under WAC 246-272A-0110 and 246-272A-0120. The PDP is not an alternative to testing and registration.
5. **Community On-Site Sewage Systems:**

Community sewage systems must be maintained according to a District approved design, management requirements, O&M schedule and/or according to specific sewage permit requirements.

6. **Commercial Systems:**

While OSS are intended for domestic waste water treatment, some buildings housing commercial businesses, such as restaurants and industrial parks, may be unintentionally impacted by disposal of non-domestic waste water and must be designed and monitored to prevent potential ground water contamination in the following manner:

- (a) **Food Service Establishments:** All food establishments being served by an onsite sewage system shall have an annual inspection by the Health District with pump-out of the septic tank as needed. Owners of food establishments serving food are required to obtain a valid monitoring and maintenance service contract with a monitoring and maintenance service provider certified by the Health Officer.
- (b) **Restaurants:** A pre-treatment device will be required to lower waste strength to household levels. Pre-treatment devices and grease traps must be maintained by a certified On-Site Maintenance Specialist to avoid discharge of grease into the treatment components. Restaurants require annual inspections of OSS as required by WAC 246-272A-0275.
- (c) **Industrial Parks:** No industrial wastewater shall be generated and discharged into an onsite system by any tenant within an industrial park. Tenants must meet all requirements specified in the Health District onsite sewage ordinance. Any new business or change in a business tenant that is on an onsite sewage system requires the applicant submit a Commercial Building Clearance to the Health District. The application is reviewed primarily to determine the type of waste generated and the onsite septic sizing requirements. Any business that will generate moderate risk waste (oils, fats grease etc. used in a food establishment) or high risk waste (dangerous or hazardous waste) will be required to submit a waste management plan with the application to show how waste will be handled. Moderate risk waste requires pretreatment prior to disposal in the onsite septic system, whereas high risk waste must be separated from the rest of the waste stream (sink drains, toilets etc.) and properly removed from the premises. The latter generally entails the signing of a contract with an approved recycler to have the waste that is stored onsite removed from the location and disposed of properly.

c. **Health Officer responsibility:**

- 1. Provide and or make available published information concerning the use, monitoring, maintenance, and permit records to owners.
- 2. Develop and maintain forms and/or reporting systems to facilitate conformance with these regulations.

3. Maintain records for all required monitoring and maintenance activities completed and submitted to the Health Officer according to these regulations.
4. Reject incomplete, inaccurate, erroneous, or misrepresentative inspection reports or contract information, and require correction and re-submittal of the information by the monitoring and maintenance service provider, pumper, installer, designer, or owner.
5. Review and respond to reports of OSS failure within two (2) days, or system malfunction where there is no failure in a timely and reasonable manner.
6. Perform necessary activities to ensure the adequate oversight and periodic review of Health Officer certified contractors to determine conformance to these regulations.
7. Review track, investigate, and report problems, concerns, trends, or performance issues of public health significance for malfunctioning or failing systems at least annually.
8. Take such actions as are necessary and reasonable to protect public health from malfunctioning or failing OSS.

### **III. Current Deficiencies in the O&M Program:**

Current Deficiencies in the O&M Program: The biggest problem facing the O&M program is getting all homeowners on standard systems to inspect their OSS every three years and report their findings to the Health District. The database has been developed to accommodate this task, but issues regarding reporting and enforcement will continue to be a problem. In addition, a funding source to pay for staff, postage, travel etc., needs to be determined for implementation to occur.

These issues are being investigated and evaluated at this time through discussions with the Kitsap Board of Health and local stakeholder groups (local OSS industry, Kitsap Home Builders Associate, Kitsap Association of Realtors, Kitsap Alliance of Property Owners, etc.).,

## **B. Sensitive Area O&M Requirements**

### **I. Current O&M Requirements for OSS Within Sensitive Areas**

- a. **Designated areas of public health risk:** Part 2, Section A.I a-b of this local management plan designates areas of special concern and allows the Health Officer to investigate and take appropriate action to minimize public health risk in those areas. The Health District currently has the authority to require an O&M contract for any type OSS within a sensitive

area, if the location, soils, seasonal water table and/or age of the system increase the potential risk for contamination to the area of concern.

- b. **Additional requirements in new and existing developments:** Section 10.B.7.b of Ordinance 2008-1 allows the Health Officer to impose more stringent requirements on new development if necessary to protect public health. Section 13.D.17.c) allows the Health Officer to require the Homeowner to obtain and maintain a valid monitoring and maintenance service contract with a monitoring and maintenance service provider certified by the Health Officer.
- c. **Reducing risk of failure:** Section 13.D.15 of Ordinance 2008-1 and Part 3. Section C.I. of the Local Management Plan provides that in order to reduce risk of failure, the local Health Officer has the authority to require a person approved or designated by him/her to comply with the following:
  1. Inspect every conventional gravity system at least once every three-years and require routine operation and maintenance of all alternative systems by a certified maintenance specialist as needed. Conventional gravity systems will be required to have an annual contract with a Kitsap County Health District certified O&M contractor to inspect and evaluate the system annually if the OSS is determined to be high risk.
  2. Submit the following written information to both the local Health Officer and the property owner within 30 days following the inspection:
    - (a) Location of tank;
    - (b) Structural condition of the tank, including baffles and water tightness;
    - (c) Depth of solids in tank;
    - (d) Structural condition of the tank, including baffles and water tightness;
    - (e) Depth of solids in tank;
    - (f) Problems detected with any part of the system;
    - (g) Maintenance needed;
    - (h) Maintenance provided at time of inspection; and
    - (i) Other information as required by the local Health Officer.
  3. Immediately report failures to the local Health Officer.

## II. Current Structure of O&M Program to Protect Sensitive Areas:

The O&M program is currently structured to be able to provide sufficient protection of public health in sensitive areas. The Health District has the

authority to enforce more stringent O&M requirements for any type of OSS, including standard gravity systems, in any designated sensitive area if there is a potential risk from OSS to public health or the environment.

### III. Additional O&M Requirements:

The following additional operation, monitoring, and maintenance mitigation measures will be required within sensitive areas that are threatened if/when OSS have been identified as a significant contributor to the problem:

- a. **Initial assessment:** An initial assessment will be done with coordination of the Kitsap County Assessor's office to identify all developed properties in the specific area of concern. Those identified properties will be matched with Kitsap County Health District onsite sewage records to determine those properties without approved onsite sewage systems.
- b. **Site inspection:** A site inspection will take place initially on those properties without records to determine the status of the onsite system. The inspection may include a dye test and bacteriological if there are signs of a failure.
- c. **Post inspection evaluation:** Once an inspection has been completed the OSS will be evaluated. Based on these findings the Health District will require one of the following:
  1. If the OSS is judged to be adequate for the site conditions and the size of the residence, an as-built drawing of the OSS will be completed by a Washington State licensed Onsite Sewage System Designer;
  2. If the OSS is judged to be inadequate for the site conditions and/or size of the residence, the Health District will require either installation of a new OSS, or it will require the owner to obtain a maintenance contract if the existing system is considered a potential risk based on age, site conditions and horizontal and vertical setback distance.
  3. Upon completion of the initial assessment all other residential properties within the area of concern will be inspected for signs of failure or impending failure. Those systems determined to be in this risk group will be dye tested and a bacteriological sample will be taken and tested for fecal coliform. Any OSS found to be failing will be required to have repair design completed by a licensed Washington State Onsite Sewage System Designer and approved by the Kitsap County Health District. The system, once approved, will be required to have a certified Kitsap County Installer take out a sewage permit and install the system as designed. All repaired systems will be required to have an O&M contract with a certified Kitsap County Maintenance contractor.

4. Any alternative OSS found, within the area of concern and without a current O&M contract, will be required to obtain one within 30 days from the date they are given notice of the violation. Standard gravity systems identified and considered high risk due to horizontal setback distance or site conditions (i.e. high seasonal groundwater conditions poor soil etc.) may be required to obtain an annual O&M contract.

#### **IV. O&M Requirements in Various Types of Sensitive Areas:**

O&M requirements for OSS within sensitive areas of the county will be the same for all sensitive areas, regardless of the type. In addition, OSS of the same type will have the same O&M requirements within different sensitive areas. Enforcement of these requirements will all be based on risk level. The Health District currently has the authority to require an O&M contract for any type OSS within a sensitive area, if the location, soils, seasonal water table and/or age of the system increase the potential risk for contamination to public health or the environment. All sensitive areas and the various types of OSS within them are being treated the same in order to make procedures less complicated for staff and the public.

#### **C. Enforcement Activities**

##### **I. O&M Inspection and Contract Requirements:**

All alternative OSS require an annual operation and maintenance contract and an OSS inspection report submitted to the Health District either annually, or as otherwise determined by either the Health District or a Manufacturer of a proprietary product. Standard Gravity Systems within threatened sensitive areas or Marine Recovery Areas will be required to have an inspection by a O&M contractor certified in Kitsap County every 3 years if the risk level of the system is determined to be low. Standard gravity systems in high risk areas will require a contract and an annual inspection with an O&M contractor certified in Kitsap County. Non-compliance can be enforced through issuance of civil infractions.

##### **II. Enforcement Compliance Can Be Measured Statistically in the Following Areas:**

- a. Percentage of un-contracted properties
- b. Percentage of Properties without an OSS inspection report
- c. Percentage of Properties with a delinquent OSS inspection report
- d. Percentage of Properties that have compliant OSS inspections
- e. Percentage of Properties that have non-compliant OSS inspections

## D. Resources

### I. Describe the Resources Necessary to:

- a. **Develop O&M requirements for OSS within sensitive areas.** The Health District already has an established O&M program with a local ordinance (Ordinance 2008-1) containing stringent O&M requirements. Because of this, and the fact that requirements in sensitive areas will be treated the same as in MRAs, additional resources will not necessary.
- b. **Enforce the O&M requirements:**
  1. **All OSS in the local health jurisdiction:** To track and enforce an additional 56,000 OSS would require an increase the program staffing by approximately 100%. The cost for staffing an additional 3.0 FTE EHS I/II and 1.0 FTE EHT I/II annually, including salary and benefits would be approximately \$265,450 and, \$60,000 respectively or \$325,450 total. Travel cost = \$10,000 and \$10,000 for supplies/equipment and miscellaneous items. Total cost for a countywide O&M program for all OSS would be approximately \$345,450/year for additional staff plus \$410,000 current O&M staff for a total budget of \$755,450.
  2. **OSS within Sensitive Areas:** No additional resources are necessary to ensure enforcement of O&M requirements in sensitive areas as they will be enforced the same as MRAs and funding is in place for this activity.
- c. **Evaluation of the effectiveness of existing and planned enforcement practices:** No additional resources would be necessary.

### E. Timeline

These activities are ongoing

### F. Summary and Prioritization of Activities

As these activities are ongoing and established, there is no need to re-prioritize them. O&M contracts are required prior to allowing occupancy of new structures, and enforced on an annual basis. Any new building proposal for an existing development requires a review of the OSS, and a determination if the sewage system is in conformance with the applicable rules or permits.

## PART 4 – MARINE RECOVERY AREA (MRA) STRATEGY

**Background:** Marine Recovery Areas are proposed by the local Health Officer in areas where existing OSS are a significant factor contributing to concerns associated with any one or combinations of the following criteria:

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

### *Activities*

#### **A. Marine Recovery Area Onsite Strategy**

##### **I. All OSS Within an MRA Will Be Identified Using a Combination of Resources:**

- a. **Record search:** The GIS will be used to map all developed parcels within the MRA. Those parcels that do not show a physical structure on them will be cross-checked with the Kitsap County Assessor's records to ensure that all data is current. Upon completion of this task all developed parcels will be matched with the Health District's database, named Stellant, which contains all the District's scanned onsite sewage records. This will be accomplished by use of tax parcel Identification and address if available. Developed parcels that do not have OSS records will be marked and placed on a list that will be inspected in the field.
- b. **Field inspection for verification:** If the field inspection confirms that a residence exists on the property, the owner of the property will be given an opportunity to produce a copy of the OSS record.
- c. **No record available:** If one cannot be produced the Health District will require that the owner obtain the services of an Onsite Sewage System Designer, licensed in the state of Washington, to confirm whether an OSS exists for the residence. If an OSS exists the designer will provide an as-built drawing of the OSS to the District.
- d. **Determination of OSS adequacy:** Based on the as-built and from information obtained from the designer, as well as pump records or other maintenance records, the Health District will make a determination as to the adequacy of the system. Depending on what is found the owner may be required to do one of the following: (1) have a new OSS designed and installed for the property along with an ongoing O&M contract regardless of the type of system; (2) utilize the existing system and require an annual O&M contract or; (3) utilize the existing system without additional O&M. The latter would be determined based on potential risk of the system to the surrounding area.

## II. Evaluation Requirements for OSS in an MRA:

Each OSS in the MRA will be evaluated to ensure it is functioning properly. A physical inspection of the property will take place if the OSS appears to be failing or is showing signs that it is either close to failing or maybe failing during extensive wet weather periods. If the property is directly adjacent to marine shoreline or to a fresh water body, such as a stream, it will be inspected for any indication of a direct discharge of sewage on to the beach or into the stream. OSS suspected of having problems i.e. having a direct discharge, ponding in the drainfield or showing signs that sewage may be surfacing on the ground will be dye tested and sampled for fecal coliform. In addition, maintenance records of each system will be reviewed to determine if there are any comments or indications on the reports that indicate the OSS may be having problems. If this should be the case, additional follow-up by the maintenance contractor or pumper may be necessary to determine if the problem still exists.

## III. Failing OSS Will Be Identified in MRAs by One of the Following Methods:

- a. **Sanitary surveys:** Sanitary surveys performed by the Health District's Pollution Identification and Correction (PIC) staff are used to find OSS failures. This program has been very successful identifying and correcting failing OSS. The program can manage up to four major sanitary survey projects every year, with most projects taking five years to complete. Projects are identified and prioritized on the Health District's PIC Priority List. Surveys consist of between 200 – 400 homes that are inspected between November and April of a given year. In cases where water quality data indicates increased fecal coliform contamination during dry weather, or if the project involves marine or lake shoreline surveys, projects may be conducted year round. Onsite sewage systems in the project area are field inspected by staff, who perform a dye test and obtain a bacteriological sample on those OSS that show physical signs of failure or that have a discharge pipe either on the beach or some other location, either on or adjacent to the property. Systems that are failing are identified. The homeowner receives a Notice Of Correction Violation (NOCV) letter and is given 30 days to submit a repair plan. The repair is installed as soon as weather permits.
- b. **Complaint response:** Another method whereby Health District staff identify OSS failures is through complaint response. Complaint response is also part of the SSWM program, receiving on average between 200–220 sewage related complaints per year. Of those complaints, an average of 75 OSS are identified by Health District staff as failing. The property owner is sent an NOCV and given thirty (30) days to submit a repair plan.

- c. **Loan status reports:** OSS failures are also identified through Loan Status Reports. Currently approximately 20% of lenders require or request that their clients have their OSS pumped by a certified pumper and inspected by the Health District. During the course of the inspection failures are identified. The percentage of lenders who require this will go up dramatically in 2008, which will be directly attributable to the passage of a Transfer of Property Inspection Program included in the new local OSS regulations. During 2007 the Health District worked with stakeholders, namely the homebuilders, realtors, Property Rights groups and its' Board of Health to develop a countywide Transfer of Property Inspection Program to be included as part of the Health District's local onsite sewage ordinance. On March 4, 2008, the Kitsap County Board of Health adopted Ordinance 2008-1 Governing Onsite Sewage System and General Sewage Sanitation Regulations, which requires an inspection at property transfer for those properties having an OSS. The new program will not only provide another avenue for local health to identify failing onsite sewage systems, but will also be used to ensure compliance with O&M requirements.
- d. **Operation and maintenance reports and pump reports:** O&M and pump reports submitted by certified maintenance contractors and pumpers to the Health District is another method by which OSS failures are currently identified and will be used in the future to identify failures in MRAs.

#### **IV. Reporting Requirements for OSS in an MRA.**

All OSS within an MRA will be required to have O&M reporting through a certified maintenance contractor. Alternative systems are required to have at least an annual inspection and depending on the type of system maybe required to have semi annual to quarterly inspections. Standard gravity systems will be required to submit an O&M report at least once every three (3) years. If the system is determined to be high risk because of siting, age of system, soils, seasonal water table etc. it will be required that the owner have an annual contract with a certified maintenance contractor who will be responsible for submitting a report to the Health District each year.

#### **V. Enforcement Procedure for Non-compliant Owners of OSS Within an MRA.**

In the event an owner will not provide information on their OSS and/or they do not have records on their system, the Health District will take the following action:

As with areas listed in the Health District's Pollution Identification and Correction Program Priority List, if a survey is to take place within an MRA, several community meetings will initially be set up with property owners in

the proposed survey area. Information will be sent out to the property owners about the community meeting and a brochure on the importance of proper functioning of their OSS will be included. If the property owner fails to provide information and their system is considered to be high risk the Health District will send the owner a letter citing the requirements for O&M and the importance of having a properly functioning OSS. If no additional information is received a second NOCV letter will be sent to the property owner indicating why they are in violation of the onsite sewage regulations and that they will receive a civil infraction if they do not comply with the Notice. If after two civil infractions the owner has not cooperated the Health District may proceed with obtaining an administrative search warrant, if necessary to go on the property to make a determination on the functionality of the OSS.

## **B. Electronic Data System of OSS Within an MRA**

### **I. O&M Reporting Process Within MRAs.**

OSS maintenance specialists, septic tank pumpers and other certified professionals performing O&M within an MRA will submit all reports to the Health District via the online OSS reporting database eOnsite.NET. Within 7 days of identification of a failure, the certified professional must submit the report into the database. The report is then immediately identified within the jurisdiction work history section of the database, where Health District personnel can review and respond to the failure (see reference diagram 4.V.I.1).

### **II. O&M Report Forms:**

All questions and forms that are used for O&M and Pump reporting are created and generated via eOnsite.NET. Each form has standardized question-sets that have been developed in conjunction with local, state and national inspection standards. Because of the dynamic functions of the database each form is unique to the specific OSS site, only displaying questions specific to the components installed on the OSS at that site (see reference diagram 4.V.II.1).

### **III. Compatibility of OSS Database for Each MRA:**

Within eOnsite.NET data is stored within a Microsoft SQL database, which is universally exportable to many other data formats. Because eOnsite.NET is a single database that is used by the Health District for daily operations and the

### Reference Diagram 4.V.I.1

Red reports indicate a report of a failing onsite sewage

Insp Date	Track Property	Company	Property	City	Send To Archive	Report
06/13/07		NORTHWEST CASCADE	10525 Sirocco Cir NW	Silverdale		
06/13/07		ALL COUNTY OPERATIONS	4049 NW Flintwood Ct	Silverdale		
06/12/07		Peninsula Septic Operation & M	2404 E 30th Street	Bremerton		
06/12/07		Peninsula Septic Operation & M	3036 Hillside Dr	Bremerton		
06/12/07		Peninsula Septic Operation & M	1061 Frances	Bremerton		
06/18/07		DAVE'S SEPTIC SERVICES	7482 Monaco Pl NW	Bremerton		
06/14/07		Peninsula Septic Operation & M	1467 Bethel Valley Lane	Port Orchard		
06/15/07		DAVE'S SEPTIC SERVICES	5809 Wilmont St	Bremerton		
06/11/07		ALL COUNTY OPERATIONS	7848 NE Chief Wahalchu Rd	Indianola		
05/30/07		GRIZZLY GENERAL CONTRACTORS	6929 E Fillmore St	Port Orchard		
06/15/07		NORTHWEST CASCADE	12668 Olalla Valley Rd	Olalla		
06/14/07		INDIGO DESIGN & MAINTENANCE SP	22140 Sunridge Way NE	Poulsbo		
06/18/07		INDIGO DESIGN & MAINTENANCE SP	7910 NE Day Rd	Bainbridge Island		
06/11/07		ALL COUNTY OPERATIONS	21057 Jefferson Beach Rd	Kingston		

### Reference Diagram 4.V.II. 1

All sites inspection reports are specific to the site/system

Edit	Component	Qty	User Defined Label	Manufacturer	Model	Serial#	Delete
	Drainfield: Pressure	1	267 feet	Infiltrator Systems, Inc.	Quick 4 Standard		
	Panel: Control	1	located under back porch	Aquaworx			
	Pump: Effluent Pump	1		Goulds Pumps	2ED Series		
	TANK: Pump Tank	1	1000 gallon	Local Manufacturer	Concrete		
	TANK: Septic Tank - 2 Compartment	1	1000 gallon	Local Manufacturer	Concrete		

service providers to run their businesses by tracking their customers, entering inspection reports, tracking inspections due, and so on, there is no need for importation, merging etc. of useful OSS data as it is already available through the collaborative use of this single internet based data system.

## C. DOH Contracts with Local Health Jurisdictions for Marine Recovery Areas

### I. Current LHJ Capacity and Estimated Resources to Meet Goals

- a. **Progressive improvement in finding failing systems:** The Health District will do a records search for each parcel located within an MRA in a phased approach. The first phase will consist of property parcels within 100 feet of the marine shoreline; the second phase, if needed, will address parcels within 100 feet of a contaminated freshwater tributary; and the final phase, if needed, will address all remaining parcels.

Comparison of properties that show some type of substantial development with the Health District's Permit road files, which are located in our existing database, will identify properties without OSS records. Those properties will be inspected and homeowners will be requested to provide a record of their system. In addition, the Health District will continue to find failing systems in MRAs through its complaint response, O&M reporting and inspections that will be performed on properties that are transferring ownership at the time of sale.

This procedure is already in place and has been utilized by the Health District SSWM program for the past Twelve years. No additional funding is necessary in unincorporated areas, as these programs are in place through the county Surface and Stormwater Management Program or there are fees in place to cover the cost. Funding will be necessary in incorporated areas to do sanitary survey work similar to that done under the county SSWM Pollution Identification and Correction Program. For actual cost see **Part 6 Summary Table containing Part 4.C.a., DOH Contracts with Local Health Jurisdiction (LHJ).**

- b. **Progressive improvement in working with OSS owners to make needed system repairs:** The Health District has been working with OSS owners in PIC Sanitary Survey Areas for over Thirteen years and have a well trained staff who do community education at meetings they arrange in advance of doing the survey itself. Homeowners learn the importance of having a properly functioning OSS and the reason why the survey is being done. This method has gotten the majority of the property owners to buy in to

the survey far in advance of anyone attempting to go on an individual's property. Without these community meetings the Health District would not have the success rate it has had in performing the survey.

Funding will need to be addressed in unincorporated areas of the county as there is no SSWM program to do Sanitary Survey work under the Pollution Identification and Correction Program. For actual cost see **Part 6 summary containing Part 4.C.b., DOH Contracts with LHJ.**

- c. **Steps taken to find previously unknown systems and ensure they are inspected as required and repaired if necessary:** The SSWM sanitary survey will ensure through a record search that all systems are found within the survey area. The actual survey will ensure that all OSS suspected of failing, based on fecal coliform sampling, age and location of the OSS, and a field inspection are dye tested. All those found to be failing will be corrected. As previously mentioned in C.I.a. above, the Health District will also continue to find unknown and failing systems in MRAs through complaint response, O&M reporting and inspections that will be performed on properties that are transferring ownership at the time of sale.

No additional funding is necessary in unincorporated areas of Kitsap County as fees or programs that provide ongoing funding are in place. Sanitary survey work performed through SSWM is funded only in unincorporated areas. A funding source for incorporated areas, particularly, Bainbridge Island, would need to be addressed to do survey work and follow-up action on OSS needing repairs. For actual cost see **Part 6 Summary containing Part 4.C.c., DOH Contracts with LHJ.**

- d. **Progressive improvement in the number of OSS included in the Health District's electronic data system:** Improvement in this area will occur through the following activities:
- Addition of new OSS permits as a result of new construction;
  - Existing developed properties applying for a remodel or expansion will identify Properties without an approved OSS permit;
  - Record searches of all developed parcels within MRAs and threatened sensitive areas will identify systems without an approved permit;
  - Complaint response for suspected failing OSS will identify OSS without an approved permit;
  - Transfer of property at time of sale will provide another method for identifying developed properties without an OSS permit.

No additional funding is necessary for performing these tasks as fees or funding sources are already in place.

- e. **Progressive improvement of OSS that have had required inspections:**  
Improvement will occur through the following activities: Continued addition of contracted alternative OSS as a result of all items specified in C.1.d above Implementation of a notification program to all owners of standard gravity systems reminding them to have their OSS inspected every three years.

Aside from implementation of a notification program, no additional costs are required as fees or funding sources are already in place. The notification program that will provide reminders to 56,000 standard gravity systems property owners will require additional staff, supplies and upgrades in the electronic database. For actual cost see **Part 6 Summary containing Part 4.C.e., DOH Contracts with LHJ.**

#### D. Resources

Burley Lagoon MRA: The Health District currently has funding in place to conduct Phase 1, and intends to conduct this project during the later half of 2008 and early 2009. Once completed, the Health District will re-evaluate Burley Creek water quality data to determine if Phase 2 is needed. If Phase 2 is needed, additional funding will be required as follows (estimates based on 2008 dollars):

##### Staff Costs:

- Average hours/house for sanitary survey project: 4 hours
- Current hourly rate: \$101
- Estimated staff cost per house (2008 \$): \$404

##### Other Costs per House:

- Travel (30 mi/house x \$0.56/mile: \$16.80/house
- Materials (samples/dye): \$ 75/house

Total Estimated Cost per House: \$500 (does not include administrative costs and overhead)

Once Phase 1 is completed, a determination is made concerning Phase 2. If Phase 2 is needed, then actual costs will be determined at that time, and grant assistance will be sought from the departments of Health and Ecology for sanitary survey work. O&M work is already funded under existing local programs.

##### Liberty Bay MRA - Phase 1 (2008 dollars): \$350,000

- Estimated 400 houses x \$500/house = \$200,000
- Water quality monitoring support - \$50,000
- Project Management, Admin & Overhead = \$ 100,000

## E. Timeline

- O&M activities are ongoing.
- Burley MRA-Phase 1: 2008
- Liberty Bay MRA-Phase 1: Begin Late 2009

## PART 5 – EDUCATION

### *Activities*

#### A. Current Education

The Health District is currently implementing several methods of educating the general public about the risks OSS pose to public health, including:

##### I. Public Brochures and Manuals:

Health District currently offers the following brochures at its three office locations, and the web at [www.kitsapcountyhealth.com](http://www.kitsapcountyhealth.com). These brochures/manuals cover all aspects of OSS design, installation and maintenance, and are tailored to the average homeowner:

- ✓ Basic Facts: On-Site Sewage System
- ✓ Building Clearance Application Guide
- ✓ Building Site Application Guide
- ✓ Health Letter Brochure
- ✓ Landscaping Around Your Septic System
- ✓ On-site Sewage System Homeowner's Manual
- ✓ Pumping Your Septic System
- ✓ Resource Guide: Sewage System Repair
- ✓ So, You Need An On-Site Sewage System!?
- ✓ The Truth About Septic System Additives
- ✓ Universal Site Plan & Checklist
- ✓ Why Do I Need Operation and Maintenance?

##### II. Conducts Pollution Identification & Correction (PIC) Projects

PIC projects are conducted to clean up Kitsap County surface waters that are impacted by bacterial contamination. On-site sewage system workshops are conducted in PIC project areas to educate the public about the impacts of failing OSS, and things they can do to prevent their system from failing. Specifically, the workshops touch on: How OSS work, how/who maintains them, symptoms of a failing OSS and what to do when their system fails, and how to properly landscape around an OSS. In addition to workshops, the Health District provides public education during its property surveys.

During the survey, Health District staff provide homeowners with a copy of their records and educational information about preventing failure. For example, water use habits/records are discussed and recommendations are made if problems are apparent.

### **III. On-Site Sewage System Complaint Response:**

The Health District receives approximately 220 OSS complaints per year. All complaints are responded to within 48 hours. Typically about 15% of our investigations result in the confirmation of a failing OSS. The other 85% of our visits are treated as an opportunity to provide public education on preventing OSS failure.

### **IV. Public Education & Outreach Events:**

The Health District participates in various public events including the Kitsap County Fair, Water Festival, Salmon in the Classroom, Ecofest, etc. The Health District also is active in Kitsap County schools and gives several presentations to classrooms every year.

### **V. Press Releases:**

The Health District issues press releases focusing on prevention of OSS failure. Usually this is done during the winter months when rainfall conditions rise to a level of concern. These press releases are posted to our website as well.

## **B. Planned Education**

### **I. Education Videos:**

Three educational videos that will be made available to Kitsap County residents that focuses on:

- a. **Operation and Maintenance of Standard Gravity On-Site Sewage Systems:** The audience is Kitsap County residents with standard gravity flow systems.
- b. **Operation and Maintenance of Alternative On-Site Sewage Systems:** The audience is with alternative OSS including pressure distribution, aerobic treatment units, and other proprietary devices.
- c. **Water Pollution Solutions:** Building on the brochure that was recently developed with Action Team funding.

- d. **DVDs available on DVD and on the Health District Website:** DVDs will be provided to county libraries, Bremerton-Kitsap Access Television, Olympic Community College, environmental science teachers in local high schools and community groups for presentation. In addition, the Health District will have a video premier event at Norm Dicks Government Center Chambers in Bremerton, and would also like to purchase two 42-inch flat screen televisions that could be installed in our main office waiting room and be used to run these educational videos on a regular basis.

## **II. OSS Education Outreach to Low Income Individuals:**

The Health District will collaborate with different public assistance agencies/groups to target lower income individuals who might own or rent homes served by OSS. This will be done by placing brochures at the offices of Community Resources, Peninsula Community Health Centers, Washington State Department of Social and Health Services, etc. The Health District will work closely with them to ensure that an adequate supply of brochures is available at all times.

## **III. Education Outreach Through other Health District Personnel:**

Health District public health nurses will be provided with brochures that can be passed out to clients living in homes served by an OSS. In addition, other Health District inspectors will be provided with brochures to be passed out as needed.

## **C. Current Reminders**

### **I. The Following Reminders Are In-place at this Time:**

- a. **Alternative OSS and commercial developments:** Owners of alternative systems and commercial developments are required to obtain/maintain an annual maintenance service contract with a certified contractor. This contract is overseen and enforced by the Health District.
- b. **Standard gravity systems:** Owners of standard gravity systems are reminded about proper maintenance of their OSS via the following:

1. When they apply for a building permit;
2. During complaint investigations;
3. During Pollution Identification and Correction projects;
4. Via the Health District's website and brochures;
5. Through periodic community presentations, news releases, and information booths at fairs and community events.

#### **D. Planned Reminders**

The only gap in the current system is the active oversight of standard systems that do not get addressed through the existing processes identified in Section 5.C.1, above. These issues are being investigated and evaluated at this time through discussions with the Kitsap Board of Health and local stakeholder groups (local OSS industry, Kitsap Home Builders Associate, Kitsap Association of Realtors, Kitsap Alliance of Property Owners, etc.).

#### **E. Resources**

The Health District has the resources to complete these activities with its existing programs with the exception of the Reminder Notifications to owners of standard gravity OSS. Cost for funding this activity are addressed in Part 6 Summary Part 3 item 2

#### **F. Timeline**

These are ongoing activities.

## PART 6 - THE PLAN SUMMARY

### PART 1: DATABASE ENHANCEMENT

GOAL/ACTIVITY	TIMELINE	RESOURCES	COST TIMELINE	FUNDING SOURCE
Complete parcel-by-parcel quality assurance review of optical imaging permit records database (Stellant).	Complete by July 2010	One FTE= <u>\$61,500/yr</u> Salary, benefits + overhead \$123,000 for 2 yrs.	Two years	Local dollars and funding made available through (DOH) Local Management plan
Integrate Permit database (LOGGER) and Stellant database to provide continuity between the two data systems.	Complete by December 2008	One IT FTE= 6 months=1/2 FTE \$86,664/2 = <b>\$43,332</b>	One time cost 6-8 month completion timeframe	Local dollars and funding made available through (DOH) Local management plan
Provide internet based GIS information access for creating detailed database information maps.	Complete by December 2008	One IT FTE= 6 months=1/2 FTE Same FTE as above no additional cost	One time cost 6-8 month completion timeframe	Local dollars and funding made available through (DOH) Local management plan
Upgrade web server and Stellant image server to accommodate more data.	Complete by December 2008	One IT FTE= 6 months=1/2 FTE <b>\$35,000</b> for software, hardware & training	One time cost 6-8 month completion timeframe	State (DOH) dollars through local management plan

*Total unfunded costs for 2008 = \$139,832*

*Total unfunded costs for 2009 = \$ 61,500*

**PART 2: IDENTIFICATION OF SENSITIVE AREAS**

GOAL/ACTIVITY	TIMELINE	RESOURCES	COST TIMELINE	FUNDING SOURCE
<p>Identify potential threatened sensitive and Marine Recovery Areas, designating those where onsite sewage is a significant contributing factor.</p> <p>Develop marine monitoring program in incorporated Kitsap County (Bainbridge Island only, all other areas already covered under SSWM)</p>	<p>Existing program in place for unincorporated Kitsap County.</p> <p>Implement by 2012</p>	<p>Unincorporated areas of Kitsap, Current Cost = \$250,000/ year for ongoing monitoring &amp; development of a Priority Work List</p> <p>Incorporated areas = \$20,000/yr for monitoring program= 2 staff (10 stations) ten times/yr = \$16,000 = \$4,000 for lab costs and travel</p>	<p>Ongoing Funding in place</p> <p>Ongoing annual cost</p>	<p>Local - Kitsap County Surface and Storm water Management Program (SSWM), state Grants to supplement SSWM funding</p> <p>Local and state funding</p>
<p>Ensure protection of sensitive areas and marine shorelines through coordinated efforts with local planning and building departments through strict enforcement of Critical Areas Ordinances, universal site plan and compliance with state &amp; local Regs</p>	<p>Ongoing: Coordination already exists and in place.</p>	<p>OSS/ O&amp;M staff time.</p>	<p>Ongoing</p>	<p>Local dollars from existing OSS Application/Permit fees</p>
<p>Assist low income property owners with OSS failures in finding affordable resources to repair them..</p>	<p>Ongoing program already in place</p>	<p>OSS, water Quality and O&amp;M staff time. No additional cost</p>	<p>Ongoing</p>	<p>Shorebank provides low income loans specifically for OSS repairs</p>
<p>Work with homeowners, local government agencies and consultants in obtaining sewers where OSS are not feasible.</p>	<p>Ongoing</p>	<p>OSS, O&amp;M and Water Quality staff time</p>	<p>Ongoing</p>	<p>Local and state funding</p>

*Total unfunded cost per year beginning in 2012 = \$20,000*

**PART 3: OPERATION MONITORING AND MAINTENANCE IN SENSITIVE AREAS**

GOAL/ACTIVITY	TIMELINE	RESOURCES	COST TIMELINE	FUNDING SOURCE
Develop O&M requirements for OSS in sensitive areas	Requirements already in	No additional resources necessary	Ongoing	Local, septage tipping fees, SSWM, O&M inspection report fees.
<p>Enforcement of O&amp;M requirements for all OSS within the jurisdiction. : Send reminders to all standard gravity OSS owners for inspection, and O&amp;M reporting</p> <p style="text-align: right;">Phase II</p>	<p>In 2008 begin.</p> <p>By 2012 enforce requirements for all OSS within jurisdiction for inspection, maintenance, maintenance and reporting.</p>	<p>One FTE Permit Tech = \$60,000/yr (salary, benefits, overhead) for address checks, file maintenance, customer service. \$8,000/yr postage. <b>Total = \$68,000</b></p> <p>Three FTE EHS I/II = \$88,150/yr per FTE (salary, benefits, overhead) X 3 = \$265,450 + an additional FTE Permit Tech I/II = \$60,000. Total salary = \$325,450 Travel =\$10,000/yr Supplies/misc=\$10,000 <b>Total= \$345,450</b></p>	<p>Annual Cost</p> <p>Annual cost for enforcement phase once fully implemented</p>	<p>State funding for Local Management Plan implementation.</p> <p>Pump report fee, Transfer of property at time of sale, O&amp;M contractor report fees</p>
Enforcement of O&M requirements within sensitive areas	Enforcement in place	No additional resources necessary	Ongoing	O&M report fees, Transfer of property inspection fee
Evaluation of the effectiveness of existing and planned enforcement practices.	Ongoing	No additional resources necessary	Ongoing	SSWM , O&M report fees, complaint response

*Total Unfunded Cost/year beginning in 2008 = \$68,000*

*Total Unfunded Cost/year beginning in 2012 = \$413,450*

**PART 4: MARINE RECOVERY AREA STRATEGY**

GOAL/ACTIVITY	TIMELINE	RESOURCES	COST TIMELINE	FUNDING SOURCE
Preparation of MRA OSS strategy	Closed Loop approach and PIC Priority Work list in place as are OSS and O&M requirements	No additional resources necessary	Programs already exist to meet MRA strategy	SSWM, O&M report fees, Transfer of property at time of sale inspection fees and local and state dollars (grants)
Progressive improvement in finding failing systems.	Programs already in place	No additional resources necessary	Programs already exist to find failing systems	SSWM (Monitoring, PIC, & Complaint Response), O&M report fees, Transfer of Property at Time of Sale inspection fees, local and state (grants)
Progressive improvement in working with OSS owners to make needed system repairs Unincorporated Kitsap County:  Incorporated Kitsap County (Bainbridge Is.)::	Program in place for unincorporated Kitsap County  Implement PIC and complaint response program by 2012	No additional resources necessary  For incorporated area .25FTE EHS I/II \$88,150/4 = \$22,038	Programs already exist  Annual Cost	SSWM (Pollution Identification and Correction Program)  Local and state (grants) funding
Locate previously unknown OSS and ensure they are inspected as required & repaired if necessary.  Incorporated Kitsap County (Bainbridge Is.)	Program in place for unincorporated Kitsap County  Implement PIC and complaint response program by 2012	No additional resources necessary. in unincorporated Kitsap County 25FTE: See above for incorporated Kitsap County (\$22,038)	Annual Cost	SSWM (PIC survey, Complaint response), O&M inspection reports, Transfer of Property Local and state (grants) funding
Progressive improvement in the number of OSS included in the Health District's electronic database system	Programs already in place to meet activity	No additional resources necessary.	Ongoing: Program already exist	OSS permit fees, Transfer of Property, Complaint Response, and O&M

				Inspection Report fees
Progressive improvement of OSS that have had required inspections	Implementation of a notification program by 2012. Other programs already in place to address this activity	Resources (\$68,000) addressed in Part 3 item 2 for staffing and mailing expense for OSS notification program	Annual Cost	Local Management Plan funding through DOH, OSS permit fees, O&M inspection fees, Transfer of Property at Time of Sale Inspection fees
Liberty Bay MRA PIC Survey Phase I	Commence PIC Survey late 2009	<p>No additional Resources necessary Estimated Cost = \$350,000</p> <ul style="list-style-type: none"> <li>• 400 houses X \$500/house = #200,000</li> <li>• Water quality monitoring support = \$50,000</li> <li>• Project management, admin, overhead = \$100,000</li> </ul>	Estimated Cost is to conduct Phase I over a two year period. Funding in place	Funding in place: SSWM PIC, O&M inspection report fees, complaint response and Transfer of Property at Time of Sale Inspection fees.
If Phase II is necessary see Part 4 Section D Resources (Page 55-56) Burley Lagoon Phase II for calculations on cost	Upon completion of Phase I If needed	Unknown at this time Cost = # homes X \$700/home	Unknown	Local Program funding (SSWM) and State DOH, DOE funding (grants.)
Burley Lagoon MRA PIC Sanitary Survey Phase I	Commence Survey late 2008 through early 2009	<p>No additional Resources necessary. Estimated Cost for Phase I 90 homes =</p> <ul style="list-style-type: none"> <li>• \$65,000. Funding in place for Phase I</li> <li>• \$25,000 from</li> </ul>	One year to Complete Phase I	Contract with Pierce County Health District and local programs (SSWM)

<p>Burley Lagoon MRA PIC Sanitary Survey</p>	<p>Phase II</p>	<p>Unknown at this time</p>	<p>Pierce County,  <ul style="list-style-type: none"> <li>\$40,000 from SSWM.</li> </ul> Burley Lagoon previously surveyed. Preliminary work on Phase I has already begun. Therefore total cost to do Phase I is less than to conduct an initial survey.</p> <p>Total cost for Phase II unknown at this time. Cost will depend on # of homes which will be determined if Phase II is necessary. Survey Costs are as follows See details for cost under Part 4 Section D Resources Staff Costs: \$404/house other costs travel and materials, lab cost = \$96/house total = \$500/house.</p>	<p>Unknown at this time</p> <p>Local and state (DOH, DOE grants)</p>
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*Total Unfunded Costs /year beginning in 2012 = \$22,038*

**PART 5: EDUCATION**

GOAL/ACTIVITY	TIMELINE	RESOURCES	COST TIMELINE	FUNDING SOURCE
Provide effective education to Homeowners of OSS regarding their responsibility to operate,, monitor and maintain their OSS.	<p>Ongoing for Alternative OSS, and Homeowners in PIC survey areas As Programs already are in place.</p> <p>Implement notification for required inspection of standard gravity OSS by 2012</p>	<p>NO new resources for alternative OSS</p> <p>Additional resources: Notification program costs addressed in Part 3 item 2 (\$68,000)</p>	<p>In Place</p> <p>Annual Cost</p>	<p>SSWM (PIC and Complaint Response Programs) , O&amp;M inspection report fees, Transfer of Property at time of Sale Inspection fees.</p> <p>Local Management Plan funding through DOH</p>

***Total Unfunded Costs /year = \$0.00***

***Total currently unfunded dollars needed to implement Local Management Plan in 2008/2009 = \$207,832***

***Total currently unfunded dollars needed for Local Management Plan in 2009/2010 = \$ 68,000***

***Total currently unfunded dollars needed for Local Management Plan in 2012 = \$455,488***

# APPENDIX

Appendix 1: Building Limitations Map

Appendix 2: Critical Aquifer Recharge Areas

Appendix 3: Streams and Surface Water

Appendix 4: Geologically Hazardous Areas

Appendix 5: Pollution Identification and Correction Priority Area Worklist

Appendix 6: State Environmental Policy Act Review- Environmental Checklist