

On-Site Management Plan Quarterly Report
October 1, 2008 – December 31, 2008
Snohomish Health District
Contract Number: C14964

Task 1

Identify all failing and unknown onsite sewage systems (OSS) in the Warm Beach beachfront community.

-Review all Snohomish Health District (SHD) files for properties with unknown OSS in the Warm Beach area, along Soundview Drive and Beach Drive.

-Complete a sanitary survey of Warm Beach.

-Confirm that any OSS found to be failing is repaired.

Task #1a: SHD File Review

Up to 170 properties along Soundview Drive and Beach Drive in Stanwood, Washington will be included in the review. In preparation for the sanitary survey, files for properties along these roads will be reviewed to determine 1) the location of known OSS and 2) the likely location of unknown or assumed OSS.

Deliverable

Completed – see Appendix A of 04-01-2008 – 06-30-2008 Quarterly Report

Task #1b: Public Notification and Education

Notification will be given to the occupants of up to 170 properties along Soundview Drive and Beach Drive in the form of an informational mailing. The mailing will include a brief summary of why we are conducting the survey and when the survey will begin. During the month of April, 2008, concerned or interested community members will be invited to provide feedback about the project via telephone call or appointment at the Health District.

All correspondence regarding the survey between SHD and Warm Beach community member will be documented throughout the designated response time period indicated in the mailing.

Deliverable

Completed - see Appendices B, C, & D of 04-01-2008 – 06-30-2008 Quarterly Report

Task #1c: Property Inspections

For each inspection, the sanitarians will be equipped with the SHD file for that property, including the as-built, a report notebook to report findings, a digital camera to document suspected failures or outfalls to be tested, and standard field equipment such as a post hole digger, compass, clinometer, and tape measure.

During inspection, the sanitarians will first attempt to greet the homeowner and explain the purpose of their visit. Once granted access, the sanitarians will inspect the septic and pump tanks for any signs of failure. Next they will inspect the drainfield for signs of distress or failure. Any surfacing sewage will be documented and samples collected.

If site review reveals that the as-built does not correctly reflect the location of the drainfield, a sanitarian will attempt to contact the homeowner to collect any information he/she may have regarding the present location and condition of the OSS.

After the initial inspection, the sanitarians will attempt to inspect the bulkhead of beachfront properties for any outfalls or suspected drainfield outlets to the Puget Sound. When any sample is collected, the location will be documented by property tax account number and a brief sketch of the location of the sample on the property. Photographs will also be taken to document all samples taken from the bulkhead.

Once laboratory results are received, any test results with a fecal coliform MPN level higher than 3000 mg/l will initiate correction procedures for the property indicated. If the sample does not come from an obvious drainfield source, further testing may be necessary. Options for confirmation testing include repeat testing of the original source, dye testing, and questioning of the homeowner.

Deliverable

Completed- see following:

150 initial surveys/inspections were done in May and June as noted in the previous quarterly report. During July 1 through September 30, 2008, SHD water/wastewater field staff completed site visits to all remaining properties within the designated Warm Beach survey area. In addition, 37 properties were revisited following contact with the property owners or obtaining additional information. In some cases, locked gates or unoccupied residences precluded complete site inspections of the septic systems. In these cases, as much information as possible was obtained regarding the status of the system by reviewing the SHD files and by observations of the system from adjacent properties.

In summary, a total of 174 properties within the defined Warm Beach survey area were evaluated either by an on-site inspection of the septic system, or by a review and update of SHD information on file based upon observations of the system from adjacent properties if the property was not accessible. There were only four (4) properties where the owners refused to allow SHD personnel access to the property for evaluation of the system.

During inspections, there appeared to be no evidence of surfacing sewage observed at any of the properties. No suspect sewage outfalls/outlet pipes directly discharging raw sewage into Puget Sound were observed. Any observed pipes on the bulkhead or beach appeared to be carrying either surface water or roof/footing drains only.

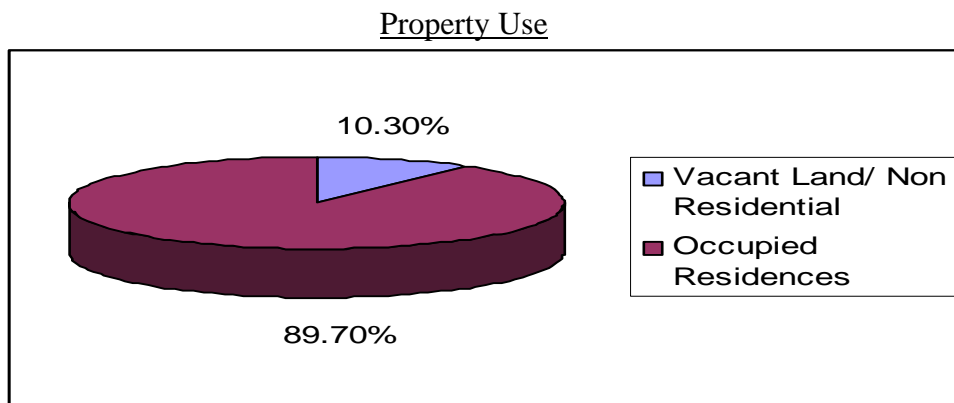
Since there was no evidence of system failures or direct sewage discharges to the beach, no bacteriological/suspect sewage samples were taken.

Summary of Survey Findings

During the October-December 2008 time period, information gathered from the surveys/inspection/file reviews was compiled and entered into a database created for the project. A total of 174 properties were entered into this database.

Property Use

A total of 174 properties within the Warm Beach survey area were evaluated. 18 properties (10.3%) were classified as vacant land or “non-residential” use. This included properties which had only garages or other out-buildings that did not have plumbing, thus not generating any wastewater. The remaining 156 properties (89.7%) had occupied residences. Although occupants of 8 of these residences informed us that they were “summer cabins only”, wastewater was still being generated and they were classified as occupied residences.

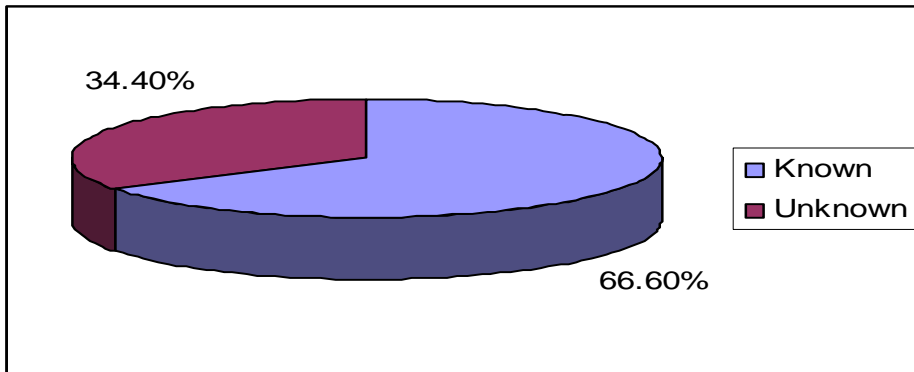


Identification of “Known” versus “Unknown” Septic Systems

One of the primary mandated tasks was to identify and classify all the septic systems within the survey area as either “known” or “unknown”. A “known” septic system was defined as either a) a SHD permitted on-site sewage disposal system with an as-built drawing on file, or b) an on-site sewage disposal system that had no SHD installation permit issued, but either building clearance drawings or other sketches adequately depicting the system were located in the SHD file for that particular property.

An “unknown” system was defined as a review of SHD and Snohomish County Assessor records or site review indicates an on-site septic system exists, but there is no record or actual documentation of the system.

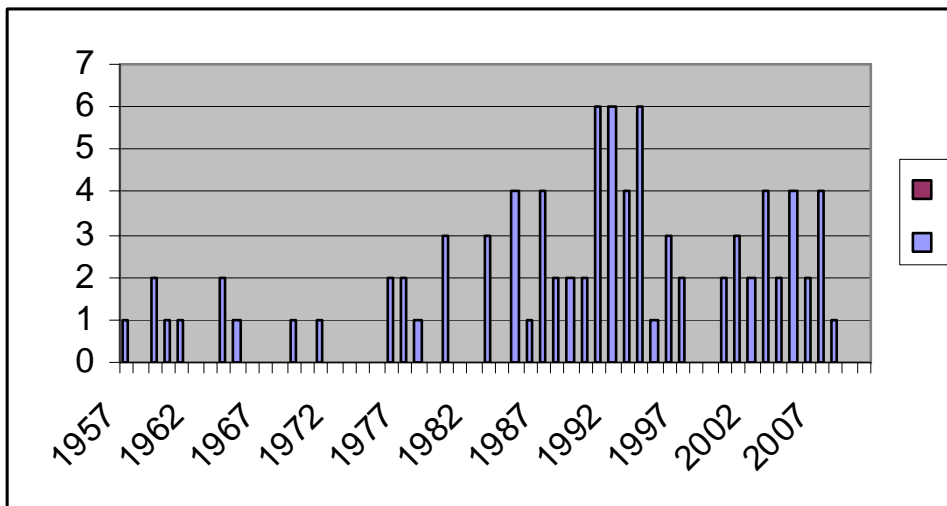
Known versus Unknown Septic Systems



As shown in the chart above, 66.6% or **103** out of 156 septic systems serving occupied residences were classified as “known” with either permitted systems or drawings of record depicting the on-site sewage disposal system. 84.5% of the known systems had SHD permits and as-built drawings on file.

Age of “Known” Warm Beach Survey Area Septic Systems

The age of the known systems are shown below. As depicted, many of these systems were installed since 1990, when the 36” vertical separation requirements went into effect.



Unknown Systems

There were 34.4% or **53** out of 156 septic systems classified as “unknown”. This number of unknown systems was based upon the strict definition created for the survey. During the survey however, based upon field evaluation and/or discussions with the property owners, information regarding the location, type, and history of many of these unknown systems was collected and placed in the SHD property files. In the future, when SHD is involved in any septic repair or proposed building permit for these properties, when adequate documentation is provided, the system status will be changed to “known”.

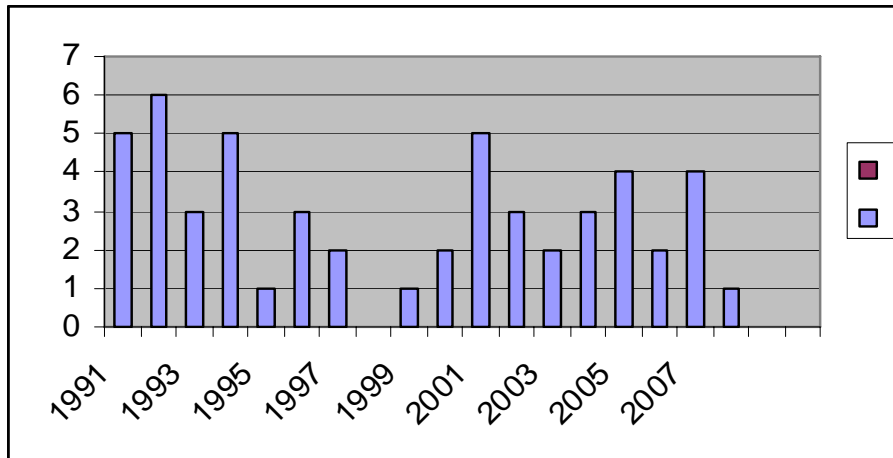
1991 SHD/DOE Warm Beach Sanitary Survey (Historical Perspective)

In 1991, the Snohomish Health District in conjunction with Washington State Department of Ecology (DOE), conducted a Warm Beach Sanitary Survey of septic systems within the Warm Beach Area. The intention of the survey was to provide the Warm Beach residents with information so decisions regarding possible community solutions to the problem of inadequate and failed on-site sewage systems could be made. Individual system repairs, construction of a sanitary sewers, and community drainfields were all identified as potential long term and comprehensive solutions. The field survey was designed around identifying septic systems as functioning, limited, or failing. The definition of “failure” in the 1991 survey was very broad, which went beyond the typical concept that a system failure was manifested in sewage discharge to the surface of the ground or surface water. A failing system included aseptic system in non-compliance with WAC 248-96 (1991 On-Site Sewage System Regulations), unsuitable soil depth, installation of systems in areas of high seasonal water table, improper construction techniques which includes design and performance, installation on inadequately sized lots, and discharge of inadequately treated sewage. Several of the criteria such as inadequate lot size and unsuitable soil were existing factors which automatically elevated the number of failing systems as documented in the 1991 survey.

The report was submitted to DOE in December of 1991. Recommendations included a) reestablishment of the Warm Beach Septic committee to evaluate potential solution measures and proposed actions such as sanitary sewers, community drainfields and individual installations, b) establishment of a public entity/agency to implement solution measures and procure funding, c) encourage all Warm Beach area residents to implement wastewater reduction practices, d) encourage residents to operate and maintain existing systems, and d) install repair/upgrade measures as applicable. Unfortunately, due to lack of community support and funding sources, the first two recommendations did not take place. However, the recently completed field survey and subsequent review of SHD files, indicates a positive trend in septic system upgrades, repairs, and property owner awareness of their system and needed operation and maintenance.

On-site Sewage System Upgrades In The Warm Beach Survey Area Since 1991

The following chart shows the number of septic systems installed within the Warm Beach Survey Area from 1991 through 2008. These include new installations and alterations or repairs of existing systems.



Over a 17 year period from 1991 through 2008, 31% or 49 of the 158 occupied residences within the Warm Beach Survey area had system repairs or upgrades.

Septic System Awareness

It is well known that a property owner who is educated about their on-site sewage system, will be much more likely to operate and maintain the system correctly. This in turn, reduces the potential for failures or potential contamination of ground and surface water from sewage effluent.

Over the years, the Snohomish Health District has included the Warm Beach area in the effort to provide property owners with information regarding their septic system and proper operation and maintenance of septic systems. In 1997, in conjunction with a Department of Ecology grant, the Health District mailed to each property owners within the plats of Warm Beach Waterfront Tracts and Warm Beach Heights Div. 1, "Homeowner Packets" which included their own septic as-built drawing, and information/brochures that discussed proper operation and maintenance of septic systems. In 2004, over 500 property owners within the extended Warm Beach area were also given updated septic system Homeowner Packets.

During the field survey, many of the homeowners contacted appeared to quite knowledgeable of their system in terms of location, system type, and the last time it was pumped. The individual site inspections and contact with property owners provided SHD personnel with the opportunity to discuss proper operation and maintenance of septic systems.

Task #1d: Enforcement Procedures for All Identified Failures

All failing systems discovered during this project will be addressed with standard Snohomish Health District enforcement procedures.

One property within the survey area may have a possible failure of the sandfilter component of the on-site sewage disposal system. Access to the property was not allowed so conformation of a failure could not be made. As of this date, SHD has not received any complaints from neighbors.

A subsequent review of this particular property file revealed that the property owner did sign a covenant in 1991 allowing the Health District to enter the property for monitoring the on-site sewage system. A follow-up inspection will be scheduled.

Warm Beach Survey Summary (Activity through December 2008)

174 Properties surveyed and entered into a database

18 of 174 properties categorized as vacant/non-residential

156 occupied residences

103 "Known" septic systems identified

53 "Unknown septic" systems identified

31% (49) systems installed/upgraded/repared since 1990

1 potential system failure noted (follow-up investigation will take place)

A completed "stand alone" Warm Beach report will be forthcoming

Task 2

Enhance the Drainfield As-Built Viewed Electronically (DAVE) database to reflect known or unknown status of all OSS in Snohomish County

- Identify all properties in DAVE without scanned record drawings (as-builts) and modify DAVE to show known/unknown status accordingly.**
- Conduct a targeted review of files related to suspected OSS with scanned record drawings (as-builts)**
- Complete a homeowner survey to identify unknown systems in a limited area**

Tasks #2a and #2b:

Determine the number of records in DAVE with OSS and what we currently know about those systems and how many we don't know anything about. Upgrade DAVE to link related files and show 'known' and 'unknown' status.

Deliverable

SHD has met the project deliverable of 80% system classification for this portion of Task 2 as documented in the previous quarterly report. If funding and staff time is available, SHD will continue reviewing files and complete the project by July 2012.

Task 3

Develop and implement an online system for routine OSS Operation and Maintenance (O&M) monitoring for all types of OSS in Snohomish County

- 1) Design operational check forms to be distributed to O&M service providers**
- 2) Update DAVE database to accept O&M information online**
- 3) Develop O&M protocol for gravity and low pressure distribution OSS**
- 4) Update all permit processes to indicate necessity to submit O&M information after the first two years**

Task #3A

Deliverables/Outcome: O&M database prototype (O&M form)

Deliverable

Completed- See Appendix H of 04-01-2008 – 06-30-2008 Quarterly Report

Update

Since the last reporting period, several minor revisions were made of the O&M form, i.e. adding some N/A (non-applicable) fields and correcting several programming glitches. At this time, the IS engineer is working on a modification of a date field so that it is more "user friendly."

Task 3b: Partner with the IT staff at SHD to determine how the O&M information can be linked into the current DAVE database.

The DAVE database gives the general public access to all as-builts on record and property information directly linked to the Snohomish County Assessor's records. It is not practical to give industry professionals direct access to input or modify data within DAVE.

The primary outcomes sought by linking the O&M reports to DAVE:

1. Give the public real-time access to both as-builts and O&M information simultaneously.
2. Simplify the process by which industry professionals collect and submit O&M paperwork,
3. Give industry providers an easy way to access OSS performance history when needed.
4. Give SHD staff an easy way to track compliance with O&M requirements.

The primary challenges involved in doing so are to create a system that links the reports to DAVE without compromising the system and to develop a mechanism for reporting that is so convenient for industry professionals, they prefer it to current O&M procedures.

Deliverable

During this quarter, the completed draft Operation and Maintenance form on the SHD test server was re-evaluated and as noted above, a few minor changes and corrections are being made. The program will then be ready to be placed on-line.

The program allows users to log in to an account unique to their company and enter yes/no answers into all the operation and maintenance fields. An area to enter text comments is provided. When a type of septic system is chosen, the program automatically populates all fields specific to that type of system. Once all data has been entered, you can then submit a report to the Snohomish Health District and print out a copy of the completed form.

Next Steps

A meeting was held with the IS engineer working on this project. The next phases of the project include a) placing the form on line so that O&M providers can actually submit data, b) writing the code so that the data can be edited, c) create search and reporting functions for the submitted data, and d) integrating the O&M on-line program with DAVE.

It is hoped that the program can be placed on line so data can be entered. Continuation of programming for editing, search, reporting functions, and integration with DAVE will be contingent upon funding levels and availability of time by the IS engineer.

