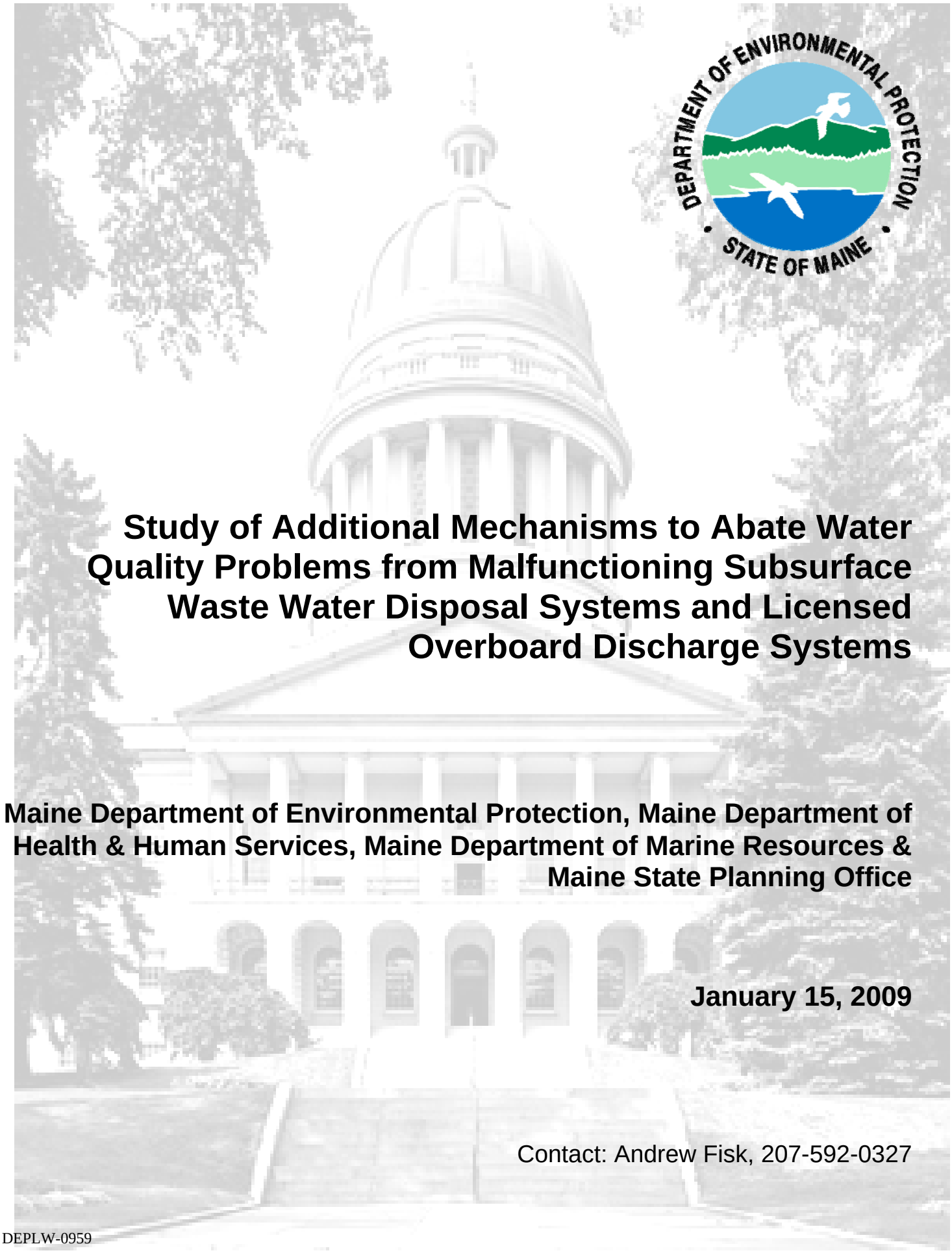


Study of Additional Mechanisms to Abate Water Quality Problems from Malfunctioning Subsurface Waste Water Disposal Systems and Licensed Overboard Discharge Systems

Maine Department of Environmental Protection, Maine Department of Health & Human Services, Maine Department of Marine Resources & Maine State Planning Office

January 15, 2009

Contact: Andrew Fisk, 207-592-0327

DEPLW-0959

This report is submitted as required by Section 10 of 2007 PL, ch. 568 *"An Act to Protect Shellfish Waters and Shellfish Resources from Coastal Pollution"* that requires:

"Study of additional mechanisms to abate water quality problems from malfunctioning subsurface waste water disposal systems and licensed overboard discharge systems. The Department of Health and Human Services, the Department of Environmental Protection, the Department of Marine Resources and the Executive Department, State Planning Office shall jointly develop recommendations on strategies to further abate water quality problems that affect shellfish harvesting and recreational uses of waters and that are the result of malfunctioning subsurface waste water disposal systems or licensed overboard discharge systems. The recommendations must be submitted to the joint standing committee of the Legislature having jurisdiction over natural resources matters by January 15, 2009."

Summary List of Recommendations:

DEP - Overboard Discharges:

1. Require OBD owners to submit a site evaluation at the request of the DEP.

2. Make low interest loans available through the State Revolving Fund for OBD removals. Loans may be used in conjunction with, or instead of, grants.

3. Fully fund the existing OBD Removal Grant Program.

4. Require OBD removals in circumstances where there are discharges to sensitive receiving waters regardless of availability of grant funds. These areas may include discharges to watersheds less than 10 square miles, tributaries of Class GPA waters, and Class GPA, A and SA waters.

5. Revise income eligibility criteria for OBD removal grant funds.

6. Require replacement of OBD systems as feasible without grant funds when significantly reconstructing the building, expanding the building by more than 30%, or prior to lot division (including sales of adjacent lots).

7. Strategically evaluate shellfish closure area boundaries to ensure the smallest protective boundary possible to allow better "targeting" of OBD removals.

8. Require OBD removals in circumstances where, regardless of availability of grant funds, connection to a public sewer is feasible.

DHHS - Subsurface Wastewater Disposal Systems:

9. Encourage municipalities with closed shellfish areas within their legal boundaries to conduct sanitary surveys of the watershed draining to the closure area.

10. Encourage municipalities with closed shellfish areas within their legal boundaries to adopt more stringent local ordinances covering the watershed draining to the closure area.

11. Increase funding to the Small Community Grant Program to help municipalities with closed shellfish areas within their legal boundaries to replace malfunctioning subsurface wastewater disposal systems within the watershed draining to the closure area.

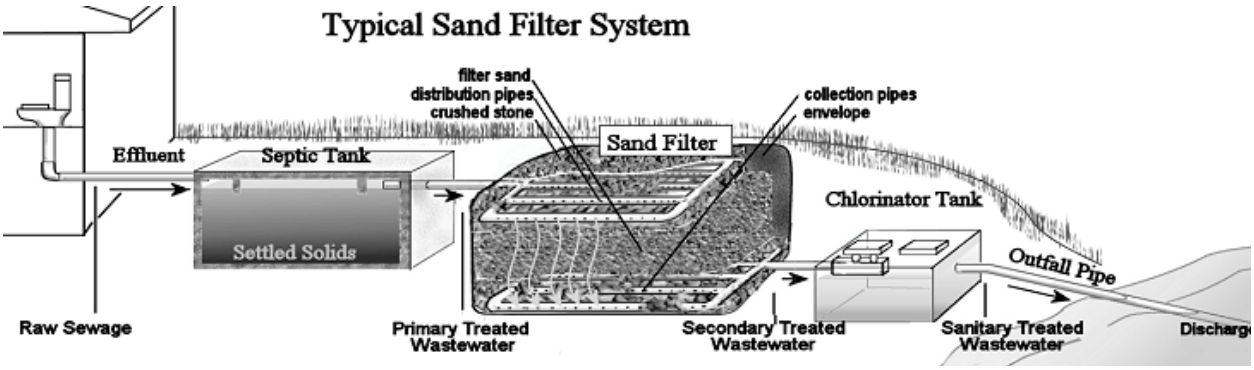
12. Increase the statutory limit on subsurface wastewater permit fees. This will provide more funds for enforcement activities by municipalities with closed shellfish areas within their legal boundaries, and allow DHHS to provide more technical and administrative support to these municipalities.

Discussion of Recommendations:

Overboard Discharges:

Background

An overboard discharge (OBD) is the discharge of wastewater from residential, commercial, and publicly owned facilities to Maine's streams, rivers and the ocean. The wastewater from OBD facilities must receive secondary treatment before being disinfected and discharged. There are two general types of treatment systems; mechanical package plants and sand filters.



The most common system, the sand filter system shown above, consists of a septic tank and a sand filter. When you flush a toilet or wash the dishes, the untreated wastewater flows through a septic tank where most of the solids settle out and are partially digested by microbes. The partially clarified wastewater flows from the septic tank into a sand filter enclosed within a plastic envelope. The wastewater flows out through distribution pipes into a layer of crushed stone. The wastewater then is biologically treated as it filters down through a sand layer. Finally, the wastewater is collected in collection pipes before being discharged to a disinfection unit. The treated wastewater at this point should be clear and odorless (without solids or a strong septic or chlorine odor).

OBDs are licensed by the Department Environmental Protection (DEP). Typical OBDs include residences, schools, and commercial establishments. As of December 31, 2008 there were 1,391 approved OBDs in the state located in 115 towns and plantations, where 56% of these discharges are located in eight coastal communities (Boothbay, Boothbay Harbor, Bristol, Georgetown, Harpswell, Southport, South Bristol, and Portland). Most OBDs were installed between 25-30 years ago to replace straight pipes (discharges of untreated wastes) in areas where connection to a publicly owned wastewater treatment facility, or installation of a septic system, was not possible. A list of OBDs and locations is attached as Appendix A.

Since 1995, 754 OBDs have been removed at a rate of approximately 58 per year. These removals were due in large part to the OBD licensing and removal program and to public sewer line extensions.

The Maine Overboard Discharge Removal Grant Program was initiated by the Legislature (38 M.R.S.A. § 411-A) to help fund replacement systems that would eliminate licensed overboard discharges in certain areas. Upon an offer of a grant of funds from the DEP, OBDs must be removed if feasible. High priority is given to shellfish areas that could be opened for harvesting if the licensed overboard discharges were eliminated. High priority is also given to great ponds and small rivers and streams with drainage areas of less than 10 square miles where the licensed overboard discharge creates a public nuisance condition.

The State share of funding for projects in this grant program comes from bond issues approved by the voters of the State of Maine. The DEP develops a priority list based on information from the Department of Marine Resources (DMR), DEP staff, local officials, shellfish committees, and other interest groups.

In addition, under Maine law, new or expanded OBDs are prohibited, OBDs must be removed if feasible during transfer of property ownership, and site evaluations (to determine if a septic system can be installed) must be performed as a requirement of license renewal. The law was last updated with regard to the licensing and removal requirements for OBDs in 2003.

DEP - Recommendations for Potential Program Changes

1. Require OBD owners to submit a site evaluation at the request of the DEP.

Currently the DEP can only require a site evaluation (which determines if soil conditions on a property allow for a septic system to be installed) be conducted when a grant of money is offered for removal of the OBD, or upon submittal of a relicensing application. As a consequence of this limited instances almost 70% of the existing OBDs have not yet had a site evaluation conducted. This means the DEP has no information on over 1,000 properties' ability to support a septic system and so eliminate the OBD. Requiring an OBD owner to submit a site evaluation at the request of the DEP would allow the Department to gather this information much more quickly and allow for more comprehensive planning for OBD removals.

2. Make low interest loans available through the State Revolving Fund for OBD removals. Loans may be used in conjunction with, or instead of, grants.

In conjunction with the Maine Municipal Bond Bank (MMBB) the DEP administers the Clean Water State Revolving Fund (SRF) that provides low interest loans primarily to municipalities and quasi-municipal corporations such as sanitary districts for construction of wastewater facilities. These loans have historically been offered at 2% below market rates, which creates an approximately 20% subsidy on a project's total cost at market rates. The SRF is funded by a combination of federal capitalization grants and state bond issue matching funds. In the last several years the MBB and the DEP have developed innovative programs that utilize SRF money to fund water quality improvements through low interest loans for septic system replacement (administered through Maine Housing) and to fund low impact forestry equipment (administered through local banks).

It is possible to develop a low interest loan program for OBD owners modeled on these programs. The interest rate would be similar to that for other SRF loans. It would be our recommendation that such a loan program would be available to fund those costs not covered by the grant program.

If loans were used instead of grants this option would place a much larger financial responsibility upon the OBD owner than is currently required. Some upper limit on OBD removal costs required to be funded solely through a loan would most likely need to be established based on the economic feasibility of certain replacement systems.

3. Fully fund the existing OBD Removal Grant Program

The OBD Removal Grant Program as currently constructed provides grant money to facilitate the highest priority OBD removal projects. Removals are targeted to OBDs in high priority shellfish areas that are closed due to the presence of the OBDs, where removals would allow an area to be reopened to harvesting. Grant money has historically been provided to the program through bond issues approved by the legislature and the voters. Since 1991, $7 million dollars has been provided to the OBD removal program which has enabled 560 OBDs to be removed and allowed for the potential for 17,697 acres of closed shellfish area to be reopened. The last funding for the program was $500,000 provided via a bond approved by the voters in 2003. Currently, all of the funding for the OBD Removal Program has been spent on OBD removal or committed to potential OBD removals. In order to continue this program, as currently designed, additional funds must be made available. It is estimated that $3 million is needed for the program as currently designed for the next two years.

4. Amend the law to require OBD removals in circumstances where there are discharges to sensitive receiving waters regardless of availability of grant funds. These areas may include discharges to watersheds less than 10 square miles, tributaries of Class GPA waters, and Class GPA, A and SA waters.

Current law requires that discharges into high quality rivers and streams (called class A), lakes, and small watersheds less than 10 square miles in size that were licensed prior to January 1, 1986 are allowed to continue only until practical alternatives exist [38 MRSA §§ 464 (4)(A)(1), 465 (2)(C), 465-A (1)(C)]. Upon relicensing, the discharger is required to submit a practical alternatives analysis to the DEP. If a practical alternative exists, the discharge must be eliminated. In determining if an alternative is practical the Department considers financial, technical, legal, and environmental aspects of the alternative.

However, these sections of law do not apply to OBD owners unless grant funds are offered to remove the OBD. The law could be amended to require OBD owners to be subject to these same requirements regardless if grant funds are available. If this option is pursued the DEP recommends that it also be expanded to include high quality marine waters (called Class SA), and tributaries to lakes if the discharge causes impairment of water quality. (There is currently one OBD that discharges to SA waters and five that discharge to tributaries to GPA waters.)

5. Revise income eligibility criteria for OBD removal grant funds.

Under the current OBD removal program the amount of grant money provided to the OBD owner is dependent on income as described in the following table.

Annual income	Portion of project expense eligible for grant
< $25,000	100%
$25,000 and $50,000	90%
$50,001 and $75,000	50%
$75,001 and $100,000	35%
> $100,000	25%

A publicly owned OBD is eligible for 50% of the project cost up to a maximum of $150,000.

A variety of changes could be made to these income criteria to stretch state grant dollars further. These include:

- Changing the definition of "annual income" for single family dwelling from "federal taxable income" to "federal total income," and striking the language for rental properties and considering them as commercial establishments or annual income depending on how they are reported on the owner's taxes. Also add language that clarifies that "Annual income" also means the sum of all individual beneficiaries' federal total incomes (or Grantor's total income) for Trusts.
- Revising the income brackets such that the upper bracket for 25% cost share becomes $100,001 to $125,000 and adding an additional bracket such that incomes greater than $125,000 are not eligible for grant funds.
- Specify that grant funds may only be used to remove OBDs at primary residences. Removals of OBDs at non-primary residences must be paid for entirely by the owner.

6. Require replacement as feasible without grant funds when significantly reconstructing the building, expanding the building by more than 30%, or prior to lot division (including sales of adjacent lots).

Since 2003, current law at 38 M.R.S.A. Sec. 413(3) requires that when the ownership of a property with an OBD is transferred the OBD must be removed if an alternative exists. These removals have all been funded by the parties to the transfer. The concept behind this requirement is that at time of property transfer there is enhanced opportunity for the parties to finance the removal, and an enhanced incentive for removal of the OBD to increase the value of the property. This requirement has resulted in a significant number of OBDs being removed each year.

Similar opportunities may exist any time a property with an OBD is significantly remodeled, expanded, or the property is subdivided.

It is noted that removals under current law, or under this proposal, may not necessarily lead to the opening of any shellfish areas since these removals are not done in conjunction with removal of

other OBDs in a closure area. It is also noted that determining when a property is significantly remodeled, expanded, or lot divided may be problematic for the DEP to track. However, such a threshold could be related to shoreland zoning permitting requirements, such that when a permit is required under a shoreland zoning ordinance this provision would apply.

7. **Strategic evaluations of shellfish closure area boundaries to ensure the smallest protective boundary possible to allow better "targeting" of OBD removals.**

Currently DMR establishes shellfish closure areas by line of site using geographic markers to ensure that shellfish harvesters and marine wardens can easily determine closure area boundaries. In areas where there are numerous OBDs, closure areas may be extremely large. It may be possible to reevaluate the boundaries of large closure areas with multiple OBDs so that the area can be subdivided into smaller sub areas such that removal of a cluster of OBDs can potentially result in opening of a portion of the larger area.

8. **Amend the law to require OBD removals in circumstances where, regardless of availability of grant funds, connection to a public sewer is feasible.**

Similar to Recommendation 4 above, the DEP recommends that the law be amended to allow the DEP to require upon relicensing a practical alternative analysis be performed if the OBD is in proximity to a public sewer line. If the DEP determined that connection to the public sewer was practical after considering the financial, technical, legal, and environmental aspects of the project, the OBD owner would be required to make the connection regardless if grant funds are available.

Subsurface Wastewater Disposal Systems:

Background

In June 1974 the state of Maine adopted a comprehensive set of rules covering the design, siting, permitting, and construction of septic systems, or as they are called today, subsurface wastewater disposal systems. These rules established criteria for site suitability, recognized various system components and construction techniques, required the use of a standard design form (HHE-200), and strengthened the system of permitting and inspecting systems at the local level. The rules have evolved over time but retain many of the fundamental principles upon which the 1974 document was based. The most significant changes include licensing of all individuals preparing subsurface wastewater disposal system designs and implementation of a voluntary certification program for system installers. For several years prior to last year's statutory requirement for inspection of septic systems at property transfer, the DHHS and the DEP worked jointly to create a voluntary inspection program that included a training program and education and outreach to realtors and mortgage lenders.

The DHHS is charged with adopting rules relative to subsurface wastewater disposal under the authority of 22 M.R.S.A.§ 42 subsections 3, 3-A, and 3-B. The elected officers of each municipality are charged with ordering the correction of malfunctioning subsurface wastewater disposal systems under the authority of 30-A M.R.S.A. § 3428. Municipalities are granted the authority to adopt more stringent ordinances relative to subsurface wastewater disposal under the authority of 30-A M.R.S.A.§ 4211 subsections 1 and 2, and subsection 5 sets the maximum internal plumbing and subsurface wastewater disposal system permit fees. The legislature has established in 30-A M.R.S.A. § 4214 that the primary responsibility for enforcing subsurface wastewater disposal rules adopted by the DHHS lies with the local jurisdiction.

DHHS - Recommendations for Potential Program Changes

9. Encourage municipalities with closed shellfish areas within their legal boundaries to conduct sanitary surveys of the watershed draining to the closure area.

Municipalities could solicit volunteers, or hire college students, to do the fieldwork. The DHHS could provide basic training utilizing the voluntary inspection training framework. The surveyors could identify "suspicious" subsurface systems that could be investigated further by the local plumbing inspector. Documented malfunctions would be referred to the elected municipal officers for correction though the authority of 30-A M.R.S.A. § 3428.

10. Encourage municipalities with closed shellfish areas within their legal boundaries to adopt more stringent local ordinances covering the watershed draining to the closure area.

Municipalities could adopt local ordinances requiring periodic inspection of all subsurface wastewater disposal systems within the watershed of a designated shellfish area. The cost of the inspection could be born by the homeowner, and any identified malfunctions would be further documented by the local plumbing inspector and referred to the elected municipal officials for correction. This could identify malfunctions sooner than only requiring an inspection at time of property transfer.

11. Increase funding to the Small Community Grant Program to help municipalities with closed shellfish areas within their legal boundaries to replace malfunctioning subsurface wastewater disposal systems within the watershed draining to the closure area.

The Small Community Grant Program is administered by the DEP and provides funds to municipalities to correct identified subsurface wastewater disposal problems. The DEP uses a priority ranking system that favors funding the replacement of malfunctioning systems that impact water bodies. The availability of more funds might prompt municipalities to be more aggressive regarding identifying and correcting malfunctions that impact designated shellfish areas.

12. Increase the statutory limit on subsurface wastewater permit fees. This will provide more funds for enforcement activities by municipalities with closed shellfish areas within their legal boundaries, and allow DHHS to provide more technical and administrative support to these municipalities.

The current subsurface wastewater disposal system permit fee is $100, and was established ten years ago as a "not to exceed cap" in 30-A M.R.S.A. § 4211 subsection 5. By statute the municipality keeps 75% of this amount and forwards the remaining 25% to the DHHS to fund the Subsurface Wastewater Program. If the current $100 not to exceed cap were increased, DHHS would then propose through existing rulemaking authority to increase subsurface wastewater fees by some amount up to the new cap. This would provide more funds for the municipalities to use for training and enforcement and allow the DHHS to provide more technical and administrative support to the municipalities. This statutory change has been included in DHHS omnibus legislation to raise certain fees within the DHHS.

Appendix A
Approved Overboard Discharges as of December 31, 2008

TOWN/CITY	NUMBER
ADDISON	3
ALNA	1
ARROWSIC	2
ARUNDEL	7
BANGOR	2
BAR HARBOR	8
BATH	9
BETHEL	1
BIDDEFORD	24
BLUE HILL	11
BOOTHBAY	136
BOOTHBAY HARBOR	68
BOWDOINHAM	5
BRADLEY	7
BREMEN	1
BRISTOL	155
BROOKS	1
BROOKSVILLE	5
BRUNSWICK	2
BUCKFIELD	7
BURNHAM	1
BUXTON	1
CALAIS	4
CAMDEN	6
CAPE ELIZABETH	4
CASTINE	4
CHELSEA	1
CHERRYFIELD	36
CHESTERVILLE	1
COLUMBIA FALLS	8

TOWN/CITY	NUMBER
CRANBERRY ISLES	11
CUMBERLAND	1
CUTLER	2
DAMARISCOTTA	3
DEER ISLE	16
DRESDEN	2
EDDINGTON	3
EDGECOMB	25
ELIOT	2
ELLSWORTH	1
EUSTIS	3
FAIRFIELD	1
FALMOUTH	1
FARMINGTON	3
FRANKFORT	2
FRENCHBORO	1
FRIENDSHIP	19
GEORGETOWN	64
GOULDSBORO	20
HAMPDEN	1
HARPSWELL	78
HARRINGTON	7
INDUSTRY	1
ISLEBORO	2
JONESPORT	10
KENNEBUNK	4
KENNEBUNKPORT	4
KITTERY	10
LEWISTON	1
LINCOLNVILLE	2
LONG ISLAND	4

Appendix A
Approved Overboard Discharges as of December 31, 2008

TOWN/CITY	NUMBER
MACHIASPORT	4
MADISON	6
MATINICUS ISLAND	1
MEDWAY	1
MONHEGAN	29
MONTICELLO	1
MOUNT DESERT	8
NEWCASTLE	1
NORRIDGEWOCK	1
NORTH HAVEN	4
OAKLAND	1
ORRINGTON	3
OWLS HEAD	18
PARSONSFIELD	1
PENOBSCOT	3
PHIPPSBURG	8
PORTLAND	60
PRESQUE ISLE	1
PROSPECT	1
ROBBINSTON	1
ROCKPORT	6
SABATTUS	1
SCARBOROUGH	2
SEARSPORT	1
SIDNEY	1
SOUTH BRISTOL	51
SOUTH THOMASTON	7
SOUTHPORT	165
SOUTHWEST HARBOR	5
ST. GEORGE	34
STANDISH	2
STEUBEN	2
STONINGTON	8
STRONG	3
SURRY	4
SWANS ISLAND	1
THOMASTON	2
TREMONT	25
TRESCOTT	2
TURNER	3
VASSALBORO	2
VERONA	1
VINALHAVEN	17
WARREN	2
WEST BATH	3
WEST PARIS	4
WESTPORT	13
WINDHAM	2
WINSLOW	4
WINTER HARBOR	7
WINTERPORT	1
WOOLWICH	8
YARMOUTH	12
YORK	12
TOTAL	**1,391**