Maine Department of Environmental Protection
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Vessel Discharge Report Errata

Page 7 Table 1. "<" should be ">" in all columns.

Page 7 Table 2. pH standard is **6.0**-9.0 in row 4 and row 6.

Page 23 The requirement that large commercial passenger vessel report graywater spills to the Department is intended to apply both inside and outside any state No Discharge Zone for graywater. See draft amendments, page 35, "Report of unauthorized discharge".

Page 50 Appendix C. All fees reported in native country dollars. Therefore, if it is an American port, the fees are in American dollars. If the port is Canadian, the fees (or tariffs) are reported in Canadian dollars.

Page 50 Appendix C. Additional information

Philadelphia PA	24	Pier, pilot, water, security	**Port calls $1.95/ foot + $7.50/passenger**	**$13,005**

DISCHARGES FROM VESSELS

A legislative report required by Resolve 2003, ch. 79

Maine Department of Environmental Protection

Submitted by Pam Parker and Hetty Richardson

November 1, 2003

Acknowledgements

The Department of Environmental Protection (Department) would like to acknowledge the assistance of members of the "Vessel Discharge Group", as well as assistance and information provided, in response to our inquiries, from many people at the local, state, and federal levels.

Department staff working directly with the Vessel Discharge Group included: Pam Parker, Hetty Richardson, Lee Doggett, Mary Breton, and Jeff Crawford. Facilitation services were provided by David Sanderson of Eagle Point Consulting.

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1. INTRODUCTION

This report has been produced by the Department of Environmental Protection (Department) as required by Resolve 2003, ch. 79, "Resolve, To Study the Implementation of a Plan to Prohibit the Discharge of Certain Wastewater into Coastal Waters".

It reflects consideration of a range of issues associated with discharges from vessels, with particular emphasis on the potential discharge of blackwater and graywater from larger commercial passenger vessels. Recent attention on vessel discharges has increased due to the approximate 20% annual growth in commercial passenger traffic in Maine's coastal waters in the past 3 years[1], and a number of significant discharges nationally. [2] The potential economic benefits of commercial passenger vessel traffic are well documented, and can provide measurable additional revenues in ports of call. However, with that traffic comes the risk of significant pollution discharges.

This report considers a number of actions to address weaknesses in information, the existing regulatory framework, and public education.

Recent legislative background in Maine

Two bills were proposed in the First Regular Session of the 121st Maine Legislature that addressed vessel discharges. Much but not all of the testimony and concerns raised focused on large cruise ships (or, commercial passenger vessels as used in this report). A bill (LD 1158, "An Act to Protect Maine's Coastal Water"), which closely parallels a law enacted by Alaska in 2001, was held over until the Second Session. A second bill (LD 1271, "Resolve, to Prohibit the Discharge of Certain Wastewater into Casco Bay") initially would have required the Department to (a) apply to EPA for designation of certain waters in Casco Bay as a no-discharge zone (NDZ) following work with a stakeholder group concerning identification of areas; and (b) adopt rules prohibiting the discharge of treated or untreated graywater within such areas.

The text of LD 1271 was replaced by an amendment (H-207). The resulting Resolve (Resolve 2003, ch. 79, "Resolve, To Study the Implementation of a Plan To Prohibit the Discharge of Certain Wastewater into Coastal Waters") directed the Department to develop a recommended plan for prohibiting or regulating the discharge of blackwater (sewage) and gray water from vessels into the coastal waters of the State, and include any legislation necessary to implement the plan.

The Resolve also included specific requirements for what professions and interested groups should be invited to participate in a stakeholder group, and where and when meetings would be held.

The resolve as enacted required four specific areas to be addressed in the Department's review.

> "1. The issues identified in Legislative Document 1158, "An Act to Protect Maine's Coastal Water" of the 121st Legislature;

[1] US Coast Guard, Marine Safety Office Portland, activity summary report. Also, according to the "2003 Ship Schedule" (Cruise Maine Coalition), approximately 23 ships, making roughly 135 separate visits to ports, were expected to visit Maine in 2003.

[2] General Accounting Office, Marine Pollution: Progress Made to Reduce Marine Pollution by Cruise Ships, but Important Issues Remain (GAO, Washington DC, 2000)

2. The benefits and detriments to identifying certain waters in Casco Bay as no-discharge zones prior to applying to the United States Environmental Protection Agency for designation of up to 50 significant harbors or bays in the territorial waters of the State as no-discharge zones pursuant to Public Law 1999, chapter 655;

3. A process for determining the boundaries of those waters that should be designated as no-discharge zones; and

4. The parameters for the regulation of gray water, including vessel weight and vessel passenger capacity; …".[3]

LD 1158, "An Act to Protect Maine's Coastal Water, raised a large variety and number of issues. Department staff sought input from the stakeholders advising the Department concerning which vessel discharge issues were considered priorities. This resulted in the Department addressing issues related to blackwater and graywater discharges first, and certain other issues as time allowed. Because commercial passenger vessels produce relatively large volumes of blackwater and graywater, they were a particular focus. Some of the other issues examined, such as issues related to oil or invasive species, related to a broader class of vessels.

[3] PL 1999, Ch. 655.

2. POTENTIAL IMPACTS

The ocean is like a vast and treacherous highway that carries people and material but, unlike asphalt or concrete, it is also a vibrant living habitat that sustains us and innumerable other creatures. The impacts of discharges from vessels can be just as significant as land based discharges to the waterbody, and more direct.

All vessels have the potential to impact the environment in which they operate; some types have a more significant potential impact than others in certain areas. As used in this section, the term "vessel" is a broad term meaning everything from privately-owned pleasure craft to cruise ships and tankers. The term "commercial vessel" includes all vessels used in commerce, generally larger than pleasure craft. Finally, "commercial passenger vessel" is a subset of the commercial vessel group.

As noted in the Introduction (Section 1), large commercial passenger vessels are a particular concern due the magnitude of the potential impacts. They generate similar wastes to towns or cities located on land, but how those waste are managed must be significantly different due to space constraints and the multiple priorities of seagoing vessels.

Blackwater

One of the primary wastes of concern on board vessels is blackwater, or toilet waste. Untreated blackwater contains large amounts of bacteria, viruses, protozoa, and parasites. Pathogens are differently susceptible to treatment technologies, some surviving all but the most aggressive treatment regimes, which may or may not be available on board ships. Waste discharged into the water can be taken up by fish or shellfish and transmitted to other hosts, including humans.

However, by itself blackwater is not toxic to marine organisms. Whole effluent toxicity test performed by the State of Alaska with 100% blackwater indicated it is essentially non-toxic[4]. That being said, the solids and organic matter in the waste require oxygen in order to decompose. A measure of the amount of oxygen required to break down the material is quantified by a test for biochemical oxygen demand (BOD). Untreated blackwater has significant levels of BOD and solids that can impair water quality by reducing the oxygen level in the water and reducing clarity. Blackwater contains nutrients like nitrogen and phosphorous that can contribute to algae blooms, which can significantly impact water quality and shellfish harvesting.

When properly treated, blackwater has significantly lower levels of BOD and solids, but the nutrient levels remain a concern in water quality limited areas. Treatment systems have varying effectiveness even when properly operated and maintained, and when not monitored closely, they often provide unsatisfactory treatment greatly exceeding the federal discharge standards. Finally, after standard treatment, blackwater may contain significant levels of residual chlorine from the disinfection process. The following table provides a comparison of raw blackwater and graywater levels and typical treatment levels on board commercial passenger vessels[5].

[4] Alaska Department of Environmental Conservation Science Advisory Panel, Review and Comment Regarding Whole Effluent Toxicity Test Results for Five Commercial Passenger Vessels in Alaska. (Alaska Department of Environmental Conservation, July, 2002).

[5] Morehouse, McGee, Loehr and Watson, Wastewater Sampling and Analysis for Commercial Passenger Vessels. (Alaska Department of Environmental Conservation Science Advisory Panel, November, 2002).

Table 1. Wastewater Comparison from Commercial Passenger Vessels

Effluent Type	Typical BOD (mg/l)	Typical SS (mg/l)	Typical Bacteria (colonies/100 ml)	Typical Chlorine (mg/l)
Raw Blackwater	<3000-6,000	<1600-15,000	<200,000	NS
Raw Graywater	95-382	52-186	99,000-118,000	.03
Treated Blackwater	6.7-105	2.7-478	2-18,000	.07-25
Treated Graywater	NS[6]	NS	1225	.05-10

The amount of blackwater treatment provided on board a vessel can vary tremendously, from a fairly simple device to a miniature sewage treatment system similar to a typical land-based public system followed by reverse osmosis. Some newer large commercial passenger vessels are installing advanced treatment units but the majority of the vessels have systems that were designed to be in conformance with the standards for Type II marine sanitation devices (MSD II)[7]. Comparing the treatment and monitoring on board vessels to similarly sized systems on land provides a dramatic contrast. The following table compares the treatment standards for the various systems.

Table 2. Treatment Standard Comparison

System Type	BOD-5 standard (mg/l)	Suspended Solids Standard (mg/l)	Bacteria Standard (Fecal colonies/100ml)	pH standard	Total Residual Chlorine Standard (mg/l)
Type I MSD	No Standard	No visible floating solids	1000	No Standard	No Standard
Type II MSD	No Standard	150	200	No Standard	No Standard
Alaska Standards for Continuous Discharge Blackwater from large commercial vessels[8]	30 monthly avg. 45 weekly avg.	30 monthly avg. 45 weekly avg.	20, 30 day geo mean	3.0-9.0	10
Alaska Standards for Graywater and blackwater from other vessels[9]	No Standard	150	200	No Standard	No Standard
Secondary Treatment	30 monthly avg.	30 avg. 50 daily max.	15 monthly avg. 50 daily max.	3.0-9.0	1

[6] "NS" means "not sampled".
[7] Marine Sanitation Devices (MSDs) are treatment systems required by federal law on all vessels with installed toilets normally designed to treat only blackwater, though many larger ships include graywater in the waste stream. Type I MSDs are required on boats less than 65' in length, Type II MSDs required for all the larger vessels.
[8] Code of Federal Regulations (CFR) 159.309
[9] Alaska Regulations Section 46.03.463, subsections b and c

standards for land based discharges[10]	50 daily max.				

Significantly, the MSD treatment standards are much less strict than those applied to land based discharges, particularly in the case of bacteria. Therefore, even vessels that have functioning MSD treatment systems are discharging treated wastewater that is significantly more polluted than that coming from a municipal treatment system.

Land side treatment plants of similar size to large commercial passenger vessels, unlike such vessels, are required to monitor their effluent weekly for BOD and TSS and bacteria, and daily for chlorine and are subject to regular unannounced inspections by the Department.

Finally, monitoring done in Alaska demonstrated that most small commercial passenger vessels are not meeting the MSD discharge standards, and large commercial passenger vessels meet the standards only sporadically[11].

Graywater

Similar in constituents to blackwater, graywater[12] can contain high levels of bacteria, nutrients, and cleaning agents. Refer to Table 1 for a comparison between graywater and blackwater. The 2002 graywater data from Alaska also indicated contamination by plasticizers, metals and trihalomethanes from the breakdown products of chlorinated cleaning compounds[13].

Unlike blackwater, current federal regulations do not require the treatment or containment of graywater through use of a marine sanitation device (see Legal Framework, Section 3). This means that in many cases, particularly in smaller commercial vessels, graywater and all of its pollutants go directly overboard. In contrast, graywater on land is subject to the same level of treatment as blackwater.

Oil

Oil or petroleum hydrocarbons are used widely for various purposes on board seagoing vessels and include lubricating oil, greases and fuel. The impact of spills of oil compounds varies depending on the actual product. Spills of petroleum products can enter the water from spills into the vessels' bilges, by tank contamination, by discharge into the graywater system, or by direct spills into the waterbody.

Spills of gasoline contain more immediately toxic contaminants and pose an explosion and burn hazard but tend to dissipate faster leaving less long lasting effects. Small spills of diesel fuel or heavier oils can result in localized suffocation or drowning of marine animals or birds. Once the fuels sink to the bottom or contaminate intertidal sediments they may have long term carcinogenic and habitat impacts by changing the delicate balance or microoganisms that form the basis of the sediment based foodchain. The impacts of large spills are well documented. Local information regarding the impacts of an oil spill can be found in the "Julie N Preassessment Data Report" by Timothy J. Reilly published in 1998. Studies of the impacts from the Julie N spill are ongoing.

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[10] CMR Chapter 525, Section 3, Subsection 3. And CFR 133.102

[11] Morehouse, McGee, Loehr and Watson, Wastewater Sampling and Analysis for Commercial Passenger Vessels. (Alaska Department of Environmental Conservation Science Advisory Panel, November, 2002).

[12] Graywater includes all wastewater excluding toilet waste. Graywater includes water from showers, galleys, and cleaning activities.

[13] Morehouse

It is estimated that annually 300 million gallons of oil escape into the marine environment one-third of which is estimated to be coming from the commercial shipping industry, including commercial passenger vessels, unrelated to accidents and collisions[14].

Hazardous Waste

Hazardous waste can be generated by a variety of small sources. Cleaning materials, particularly degreasing agents used during maintenance can contain toxic or reactive ingredients. Many paints and painting products can contain lead so any dust or chips generated during maintenance will also be lead contaminated. On board dry cleaning facilities and photo processing labs have been historical sources of hazardous waste. All the compounds can find their way into bilge water or graywater without careful management.

Once in the waterbody, hazardous waste can be acutely toxic to marine animals and some can accumulate in tissues or fat, their affect magnifying though the food chain. Discharges that reach the sediments can remain persistent for many years. If there are hazardous wastes leaving a ship through discharges, then they need to be controlled.

Air

The engines from large commercial vessels emit nitrogen oxides, sulfur dioxide and particulate matter. Nitrogen oxides and sulfur dioxide are major contributors to ground-level ozone, which can trigger serious respiratory problems, are the major components of acid rain, and a important factor in global climate change. Nitrogen oxides can react to form nitrate particles, acid aerosols, as well as NO_2, which all cause respiratory problems. Nitrogen oxides can contribute directly to water quality problems due to nutrient overload that deteriorates water quality. Both nitrogen oxides and sulfur dioxide contribute to atmospheric particles that cause visibility impairment most noticeable in national parks. Ground-level ozone can trigger a variety of health problems even at very low levels, may cause permanent lung damage after long-term exposure, and damage plants and ecosystems.

Particulate matter is a pollutant that includes both solid particles and liquid droplets found in air. Particulate matter is associated with serious health affects including increased hospital and emergency room visits for people with respiratory and heart disease. When exposed to particulate matter, children and people with existing lung disease may not be able to breathe as deeply or vigorously as they normally would, and they may experience symptoms such as coughing and shortness of breath. In addition, particulate matter can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases, such as asthma and chronic bronchitis.

Finally, nitrogen oxides and sulfur dioxides and particulate matter are the major sources of haze that reduces visibility in many parts of the United States. When deposited on soil and water, these compounds can harm the environment by changing the nutrient and chemical balance in the soils and the downstream waterbodies.

Commercial vessels often burn heavy, often high sulfur fuels and unlike their land side equivalents are not subject to retroactive emissions regulations and therefore there are few, if any, emissions controls on ships.

[14] National Research Council, 1985, Oil in the Sea: Inputs, Fates, Effects (Washington, DC. National Academy Press, 1985)

Solid Waste

The solid waste generated on board commercial vessels is similar to that created on land, consisting of metal, plastics, paper, glass and organics. If not properly disposed of, many of these materials can be persistent in the environment and can entangle, choke, strangle or stress impact marine animals. The waste can also contain pathogens. Vessels recycle their waste to varying degrees, and so must be capable of holding a lot of material. Material that can't be recycled may be burned in incinerators onboard. Incinerators may discharge emissions containing metals and dioxin. It is unclear how many vessels have onboard incinerators.

Invasive Species

Normal commercial vessel operation can result in species being transported from one location to a significantly different one. If these species are suited to local conditions, they can potentially out-compete indigenous species resulting in disruption of the food chain and the ecosystem. Such invasive species can also become a nuisance problem by fouling intake or outfall lines, and beaches. Invasive species can be transported though ballast water tanks, or as "hitch-hikers" on a vessel's hull.

3. LEGAL FRAMEWORK

This section is organized by major issues. It does not attempt to describe every law potentially affecting shipping, but rather to address those of most significance.

Blackwater

International Law. The International Convention for the Prevention of Pollution from Ships, as modified by the protocol of 1978, is implemented by the United Nations International Maritime Organization (IMO), which sets maritime pollution standards.

The treaty includes 20 Articles and 5 Annexes. The 1978 protocol contains modifications to the original 1973 treaty text. Article 14 provides that Annexes I and II are mandatory on parties to the treaty, while Annexes III, IV, and V are optional annexes and not binding unless a party has specifically accepted them. Topic and status are as follows:

Annex	Subject	Entry Into Force
I	Oil	10/2/83
II	Noxious liquids carried in bulk	4/6/87
III	Harmful substances carried in packaged form	7/1/92
IV	Sewage from ships	United States is not a party
V	Garbage from ships	12/31/88
VI	Air emissions	not yet in force[15]

Annex IV (Sewage from ships) took effect September 27, 2003. However, the United States is not yet a party, and so is not bound by its requirements. The Annex was submitted to the United States Senate for ratification in May, 2003.

For member states that have accepted it, Annex IV applies to ships engaged in international voyages. It immediately affects all new ships of 400 gross tonnage and above and new ships of less than 400 gross tonnage that are certified to carry more than 15 persons. It applies to existing ships of 400 gross tonnage and above, and existing ships of less than 400 gross tonnage and above that are certified to carry more than 15 persons five years after September 27, 2003.[16]

Annex IV's standards would prohibit the discharge of comminuted and disinfected sewage within 4 nautical miles of land, with certain exceptions.[17] It would allow the discharge within four nautical miles if a ship is equipped with a sewage treatment plant that meets operational requirements based on standards and the test methods developed by the IMO. The effluent standards recommended for bacteria[18] are weaker than those contained in federal law (for type two marine sanitation device), which are again weaker than those required in Maine for land-based dischargers to marine waters.

[15] EPA website as of 11/1/03, "MARPOL 73/78 Overview", http://www.epa.gov/owow/OCPD/marpol.html
[16] IMO website as of 9/6/03, "Sewage rules for ships to enter into force following breakthrough ratification", http://www.imo.org/Newsroom/mainframe.asp?topic_id=583&doc_id=2524
[17] See MARPOL Optional Annex IV, Regulations 8 and 9.
[18] "The geometric mean of the faecal coliform count of the samples of effluent taken during the test period should not exceed 250 faecal coliforms/100 ml M.P.N. (most probable number) as determined by a multiple tube

Federal Law

Discharges incidental to the normal operation of a vessels are exempt from federal NPDES permit requirements. Two other programs govern discharges of blackwater. Vessels are required to meet requirements for marine sanitations devices (MSDs) adopted by EPA and enforced primarily by the Coast Guard. Also, states may apply to EPA for designation of "no discharge zones" (NDZs), where the discharge of sewage, treated or untreated, from all vessels is prohibited.

1. MSDs

Marine sanitation devices or "MSDs" are required for all vessels equipped with installed toilets. The MSD requirements do not apply to graywater, and do not apply beyond the 3-mile limit, where it is legal to discharge raw sewage at this time under federal law. In standards developed in the late 1970s, the MSD II used by a vessel of 65 feet or less in length is required to produce a fecal coliform bacteria count not greater than 1000 per 100 milliliters and have no visible floating solids. Vessels over 65 feet may not discharge effluent with a fecal coliform bacterial count of greater than 200 per 100 milliliters, nor suspended solids greater than 150 mg/l.[19] Any size vessel may alternatively employ a holding tank, which is also known as a MSD III.

States may not adopt or enforce statutes or rules with respect to "the design, manufacture, or installation or use of any marine sanitation device on any vessel" subject to Section 312 of the Clean Water Act.[20]

2. NDZs

Pursuant to the Clean Water Act, Section 312(f)(3), a state may completely prohibit the discharge of both treated and untreated sewage from all vessels with installed heads, into some or all waters. To create a no-discharge zone or "NDZ"[21], the state must apply to the regional EPA administrator under one of three categories, the first being the one far most often used. EPA is required to respond to an application within 90 days although, according to regional EPA staff, the information and formal process of designation may take up to a year.

> "In the past 10 years, the Northeastern region of the United States (Massachusetts to New Jersey) has accounted for nearly 95% of the NDZ designations (15 of 16). Of these 16, 7 were in Massachusetts."[22] (Note: this information is from an article appearing in 1999).

The types of NDZs include the following.

> a. Environmental protection (must show pumpout availability). The state must determine that the protection and enhancement of the quality of the waters requires greater environmental protection, and demonstrate that adequate facilities for the safe and sanitary removal and treatment of sewage from all vessels are reasonably available. The determination concerning what requires greater

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fermentation analysis or an equivalent analytical procedure." Resolution MEPC.2(VI), Annex A(1)(i), "Recommendation on international effluent standards and guidelines for performance tests for sewage treatment plants."

[19] 40 CFR 140.3(d).

[20] See 33 USC 1322(f)(1)(A).

[21] Sometimes also referred to as a "no-discharge area" or "NDA".

[22] From EPA website as of 9/7/03, "No Discharge Zones: How They Work", http://www.epa.gov/owow/oceans/regulatory/vessel_sewage/vsdarticle.html, from an article by James Woodley (1999), discussing NDZs designated in the previous 10 years. The following web page lists existing NDZs by state: http://www.epa.gov/owow/oceans/regulatory/vessel_sewage/vsdnozone.html

protection is up to the state, and the determination concerning whether adequate pumpout facilities are available is up to EPA. EPA must issue a Notice of Determination in the Federal Register of its findings regarding the availability of adequate pumpout and dump stations to support the state's NDZ.

b. Special waters (not necessary to show pumpout availability). Upon application of the state, the EPA issues a regulation declaring a NDZ in the waters of concern (i.e., special waters) if the protection and enhancement of the quality of the waters requires such a prohibition (i.e., if the waters are found to have particular environmental importance). This environmental importance can include waters located in established sanctuaries, national parks, national wilderness areas and national recreation areas, and in waters used by endangered or threatened species. The State does not have to show that there are reasonably available pumpout or dump stations. This provision has been rarely used.

c. Drinking water intake zones (not necessary to show pumpout availability). Upon application of the State, EPA may establish a NDZ by regulation to prohibit the discharge of sewage from vessels into waters that are drinking water intake zones. The state is not required to show that there are reasonably available pumpout or dump stations.

Maine Law

1. Waste Discharge Law. Maine's Waste Discharge Law provides that:

"No person may directly or indirectly discharge or cause to be discharged any pollutant, without first obtaining a license therefor from the Department." 38 MRSA 413.

Unlike the federal waste discharge program (National Pollutant Discharge Elimination System or "NPDES"), Maine does not exempt discharges from vessels from this licensing requirement. However, the Department of Environmental Protection ("Department") has not previously enforced this licensing requirement in respect to discharges from vessels. The Department has been focused upon addressing land-based discharges, although Section 413 of the law would be relied upon in the event of enforcement action taken in response to a spill from a vessel. It is likely that Maine is currently preempted from licensing blackwater discharges by the federal law described previously, which exempts these discharges from licensing requirements at the federal level, and substitutes a basic technology standard and a no-discharge zone program.

2. No-discharge zones (NDZs). Maine has not yet applied for designation of any NDZs in coastal waters. PL 1999, ch. 655 established a process for the Department to follow in applying to EPA for NDZs in coastal waters, including timeframes and reporting back to the Legislature. The Department is currently on track to complete the process outlined in Chapter 655.

Industry Guidelines

The International Council of Cruise Lines (ICCL) requires its members to conform with certain industry guidelines. In regards to blackwater, the guidelines provide in part:

"Member lines have agreed that blackwater will be discharged only while the ship is underway and proceeding at a speed of not less than 6 knots and in accordance with applicable regulations; and that treated Blackwater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having jurisdiction or provided for by

local law, except in an emergency, or where geographically limited. Member lines have further agreed that the discharge of blackwater will comply with all applicable laws and regulations."[23]

Wastewater treatment systems using advanced treatment technologies, as determined by the industry, are not required to meet these guidelines. ICCL is believed to represent the majority, but not all, large cruise ships in Maine waters.

Graywater

International Law

Except possibly in certain very limited circumstances, MARPOL Annex IV does not apply to graywater. See discussion under "Blackwater" concerning this annex.

Federal Law

Graywater discharges are exempt from NPDES permitting requirements. The discharge of graywater is unregulated at this time.

- A General Accounting Office (GAO) report in 2000 recommended discussions be initiated "on the need for improved water quality standards for graywater and blackwater discharged from cruise ships and other vessels and assess the need to periodically monitor the water quality of these discharges."

- The U.S. Environmental Protection Agency (EPA) was petitioned by the Bluewater Network on March 17, 2000 to take "regulatory action on measures to address pollution from cruise ships." [24]EPA agreed to study cruise ship discharges and waste management practices.[25] EPA presented issued a preliminary "white paper" in August, 2000. EPA noted that the exclusion of graywater from NPDES permitting was first promulgated in May 22, 1973[26], and that the NPDES vessel exclusion "was premised on the assumption that vessel discharges, including graywater, were minor sources of pollutants as compared to other discharges."[27]

- The U.S. Environmental Protection Agency recently released a decision[28] on a petition related to 40 C.F.R. 122.3(a). Section 122.3(a) provides that a federal National Pollutant Discharge Elimination System (NPDES) permit is not required for discharges incidental to the normal operation of a vessel. The decision specifically addressed issues related to invasive species, but more broadly noted that:

  "States are not pre-empted by the CWA [Clean Water Act] from acting to regulate discharges incidental to the normal operation of a vessel (other than Armed Forces vessel pursuant to the Uniform National Discharge Standards at 40 C.F.R. 122.1(i)(2))…Further, under CWA, Section 510, States are not precluded from adopting more stringent requirements than Federal requirements."

[23] Cruise Industry Waste Management Practices and Procedures, ICCL Industry Standard, E-01-01 (Industry Standard), p. 3. See also Attachment to ICCL Standard E-1-01 (Revision 1).
[24] Cruise Ship White Paper, U.S.E.P.A., August 22, 2000 (p. 2).
[25] Id.
[26] Id., (p. 13). See 38 FR 13530.
[27] Id. (p. 14)
[28] Decision of U.S. Environmental Protection Agency on Petition for Rulemaking to Repeal 40 C.F.R. 122.3(a), September 2, 2003.

> The exclusion for discharges incidental to normal operation of a vessel is not a required element for state NPDES programs.

Maine Law

Waste Discharge Law. Maine's Waste Discharge Law provides that:

> "No person may directly or indirectly discharge or cause to be discharged any pollutant, without first obtaining a license therefor from the Department." 38 MRSA 413.

Unlike the federal waste discharge program (National Pollutant Discharge Elimination System or "NPDES"), Maine does not exempt discharges from vessels from this licensing requirement. However, the Department has not previously enforced this licensing requirement in respect to discharges from vessels. The Department has been focused upon addressing land-based discharges. Section 413 of the law would be relied upon in the event of enforcement action taken in response to a spill from a vessel. Although there is some litigation risk with extending licensing to large commercial passenger vessels, the Department feels it is not sufficient to avoid proceeding if licensing is otherwise advisable.

Industry Guidelines

The International Council of Cruise Lines (ICCL) requires its members to conform with certain industry guidelines. The guidelines provide in part:

> "Member lines have agreed that graywater will be discharged only while the ship is underway and proceeding at a speed of not less than 6 knots; that graywater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having jurisdiction or provided for by local law except in an emergency, or where geographically limited. Member lines have further agreed that the discharge of graywater will comply with all applicable laws and regulations."[29]

Wastewater treatment systems using advanced treatment technologies, as determined by the industry, are not required to meet these guidelines. ICCL is believed to represent the majority, but not all, large commercial passenger vessels in Maine waters.

OIL

International Law

MARPOL Annex I came into effect in 1983. It is mandatory on parties to the treaty. It limits discharges of oil, and requires maintenance of records concerning oil disposal.

Federal Law

Within 12 miles of the coast, the discharge of oil is prohibited unless it is put through an oil-water separator and the discharge does not cause a visible sheen or exceed 15 ppm.

[29] See footnote 21, p. 2.

Maine Law

The existing standard in Maine is stricter than federal law.

> "The discharge of oil into or upon any coastal waters, estuaries, tidal flats, beaches and lands adjoining the seacoast of the State, or into or upon any lake, pond, river, stream, sewer, surface water drainage, ground water or other waters of the State or public or private drinking water supply or onto lands adjacent to, on, or over such waters of the State is prohibited."[30]

Notwithstanding this prohibition, the Department is authorized to issue a license for the discharge of waste, refuse, or effluent, including natural drainage contaminated by oil, if and only if it finds that the discharge will meet specified statutory criteria. These specify that

> "the discharge will be receiving best available treatment and the discharge will not degrade existing water quality, perceptibly violate the classification of the receiving waters or create any visible sheen upon the receiving waters."

The Department has not issued a license for the discharge of oil contaminated effluent from a vessel in recent years.

Industry Guidelines

The International Council of Cruise Lines (ICCL) requires its members to conform with certain industry guidelines. The guidelines provide in part:

> "Member lines have agreed to meet and exceed the international requirements for removing oil from bilge and wastewater prior to discharge."[31]

HAZARDOUS WASTE

Maine Law

Hazardous waste discharges are prohibited under 38 M.R.S.A 1317-A and 1306(3). Section 1318(B-1) requires immediate reporting of any hazardous matter discharge to the Department of Public Safety, which notifies the Department. There is also a follow-up written report requirement (within 30 days).[32]

Industry Guidelines

The International Council of Cruise Lines (ICCL) requires its members to conform with certain industry guidelines. Industry guidelines address specific areas such as dry-cleaning waste fluids, photo processing, unused and outdated pharmaceuticals, batteries, flourescent and mercury vapor lamp bulbs, etc.[33]

[30] 38 M.R.S.A. § 543 (in part).
[31] See footnote 21, ICCL Industry Standard, p. 2.
[32] 06-096 CMR 801.
[33] See footnotes 21, ICCL Industry Stanard, p. 2.

SOLID WASTE

Maine Law

The discharge of solid waste is prohibited by 38 M.R.S.A. 417(3), which prohibits the discharge to tidal waters of "Any scrap metal, junk, paper, garbage, septic tank sludge, rubbish, old automobiles or similar refuse."

Industry Guidelines

The International Council of Cruise Lines (ICCL) requires its members to conform with certain industry guidelines. The guidelines provide in part:

> "Member lines have agreed to eliminate to the maximum extend possible, the disposal of MARPOL Annex V wastes into the marine environment through improved reuse and recycling opportunities. They have further agreed that no waste will be discharged into the marine environment unless it has been properly processed and can be discharged in accordance with MARPOL and other prevailing requirements."[34]

AIR

International Law

Some air issues are addressed by MARPOL Annex VI, but less than a handful of states have ratified it, and it is not in effect.

Federal Law

The Clean Air Act requires EPA to set national emissions standards to address problems related to emissions from marine deisel engines. EPA recently adopted emission standards for new diesel engines with per-cylinder displacement of 30 cylinders or more (Category 3) provided they are installed on vessels flagged or registered in the United States. Therefore, the federal standards do not apply to all or the majority of large commercial passenger vessels.

Maine Law

States are preempted from regulating marine diesel engines. The Department has applied its opacity standards in the past in a minor way, but not applied them to emissions from vessels for several years.

Burning or incineration of hazardous waste in Maine, including on vessels in Maine waters, is prohibited unless specifically licensed by the Department.

INVASIVE SPECIES

This is a rapidly developing area. There are not many enforceable standards yet, but a lot of interest and activity at the international, federal, and state levels.

[34] Cruise Industry Waste Management Practices and Procedures, ICCL Industry Standard, E-01-01 (Industry Standard), p. 2. See also Attachment to ICCL Standard E-1-01 (Revision 1).

The Marine Environment Protection Committee (MEPC)[35] agreed, in July 2003, to a finalized draft of a proposed International Convention for the Control and Management of Ships' Ballast Water and Sediments, and will hold a diplomatic conference in February 2004 to adopt the Convention in accordance with a timetable already approved by the Council. (IMO web site).

The U.S. Coast Guard has issued proposed ballast regulations for public comment.

Maine's new 'Invasives Law" addressed invasive aquatic freshwater plants, not marine species, and established the Interagency Task Force on Invasive Aquatic Plants and Nuisance Species (Task Force). The State of Maine Action Plan for Managing Aquatic Invasive Species[36] noted that:

> "Because the threat to lakes was the primary impetus for establishment of the Task Force, marine interests were not included in the legislation. Nevertheless, the Department of Marine Resources (DMR) has participated in the development of [this] plan. While there is an important role for DMR to play in managing invasive aquatic species, the Department lacks the authority and resources to effectively participate."

Strategy 1A of the plan is intended to begin to close the existing management gap by including tidal and marine waters. The plan requires the Task Force to clarify details, during its first annual review of the program in 2003, concerning how tidal waters will be integrated into the inspection and education program, and how the sticker program could be expanded to cover DMR's invasive species management efforts. Depending upon that review, the Land and Water Resources Council may ask the Governor to seek changes to 38 MRSA Chapter 722.

[35] The Marine Environment Protection Committee (MERC) is the Internal Maritime Organization's senior technical body on marine pollution related matters. It includes a number of sub-committees.

[36] Adopted by the Land and Water Resources Council, and the Interagency Task Force on Invasive Aquatic Plants and Nuisance Species (October 10, 2002).

4. RECENT ACTIVITY IN OTHER STATES

In 2001, Alaska enacted a first-of-its-kind statutory framework and implementing rules for addressing a range of potential discharges from commercial passenger vessels.[37] The program in Alaska requires effluent to be monitored, and commercial passenger vessels to provide information such as types of treatment systems used if any, passenger capacity, and solid and hazardous waste management plans.

A recently proposed citizen initiative in Alaska, if passed, would result in a $50/person passenger tax on cruise ships. In addition,

> "The initiative would use the per-passenger tax to: require cruise ships to get permits for all wastewater discharges, record those discharges and make the records public; pay to have licensed marine inspectors onboard to observe all operations; and give citizens the right to sue the state to enforce violations of dumping rules."

The initiative has to obtain a required number of signatures to be put on the 2006 ballot.[38]

Florida and Hawaii currently both have Memorandum of Understanding with representatives of the cruise industry. A bill was introduced in Hawaii's Legislature (HB222) in January 2003 (a) to establish enforceable standards for the discharge of treated sewage, graywater, and other wastewater from commercial passenger vessels into the marine waters of the State, and (b) to prohibit the discharge of untreated sewage from commercial passenger vessels into the marine waters of the State. The bill has been carried over to the 2004 legislative system.

California recently released a report to the legislature titled "Regulation of Large Passenger Vessels in California (August, 2003), from a multi-agency Cruise Ship Environmental Task Force. Also, three bills have been enacted in California this year prohibiting the release or discharge of sewage sludge, oily bilgewater, hazardous waste, medical waste, and photography lab or dry cleaning chemicals from large commercial passenger vessels.[39]

Many states have No Discharge Zones for blackwater, and many of the recent designations have been in New York and New England. The Hudson River was recently designated as a No Discharge Zone. Connecticut has one designated area with others under consideration. The entire coastline of Rhode Island is a No Discharge Zone, as is all of Massachusetts' Buzzards Bay and many smaller ports. New Hampshire is considering a statewide No Discharge Zone.

[37] In 2000, Congress passed an act entitled "Certain Alaskan Cruise Ship Operations", which authorized Alaska to impose additional requirements relating to discharges of blackwater and graywater from certain cruise ships.
[38] "Craig Welch, "Group Targets Cruise Industry with Controversial Initiative" (Seattle Times, 10/11/03).
[39] See AB 121, AB 906, and AB 433.

5. PROCESS

Stakeholder Group and Meetings

The required process for the Vessel Discharge Group was established by Resolve 1993, ch. 79, "Resolve, To Study the Implementation of a Plan to Prohibit the Discharge of Certain Wastewater into Coastal Waters". It required the convening of a stakeholder group to help develop a recommended plan for prohibiting or regulating the discharge of sewage and graywater from vessels into coastal waters of the State.

Chapter 79 provided that the Department should invite representatives of the following interests and professions.

> "a marine biologist, an oceanographer and a harbor master and a representative of each of the following interested parties…the Joint Standing Committee on Natural Resources, an environmental advocacy organization, a marine trade association, the marina industry, the United States Coast Guard, a group representing the interests of saltwater recreational boaters, the boatbuilding industry, the commercial fishing industry including loberstermen and shellfish harvesters, the aquaculture industry, the tourism industry, the hotel industry, the marine terminal industry and other interested parties as determined by the Department…".

A list of the persons who were invited, and those who ultimately participated in the various meetings is available at http://www.maine.gov/blwq/topic/vessels/report.htm. In some cases, persons contacted indicated they were able to represent more than one of the listed groups. Two interests mentioned on the list were invited but either did not respond or were not able to make the meetings: aquaculture and saltwater recreational boaters. Senator Tom Sawyer represented the Natural Resources Committee. One of the Chairs of the Legislature's Natural Resources Committee, Representative Theodore Koffman, the sponsor of LD 1271, Representative Herbert Adams, and Susan Johannesman of the Legislature's Office of Policy and Legal Analysis also participated.

The Department invited several additional persons to join the stakeholder group, and some persons contacted Department staff and were included. Additional interests that were able to attend one or more meetings included: the cruise ship industry, a group encouraging increased use of Maine's ports by cruise ships, the Maine Department of Marine Resources, the Port of Portland, the Maine Department of Transportation, and the author of a recent study on cruise ships. During the process, the Department was contacted by one of the smaller cruise lines in Maine, and added the representative, although unfortunately he was not able to make the last meeting. Senator Michael F. Brennan, a sponsor of LD 1158, was invited but unable to attend. Some of the observers who attended are listed at the end of the list on the web referred to previously.

Participants and other parties expected to be interested were kept informed of the process by email, regardless of their ability to participate in meetings.

Before the first meeting, the Department requested that members submit written comments outlining their major issues and concerns, in order to help the Department better structure the first meeting. The materials received were made available through the web to the group members.

Chapter 79 required that the Department, at a minimum, hold one meeting in Portland and one meeting in Bar Harbor. The Department held two half-day meetings at each of these locations, and a third longer meeting in Augusta. Meeting agendas and summaries are available through http://www.maine.gov/topic/vessels/report.htm

It was emphasized at the meetings that this three-meeting process was not a consensus process, although the Department would seek agreement where possible. It was also emphasized that all members of the stakeholder group should feel free to go forward and present their particular perspectives before the Natural Resources Committee. However, the third meeting resulted in a notable degree of consensus given the time available. There was agreement on the basic approach to graywater; agreement on some aspects of the approach to blackwater with a good discussion of concerns, differences, and questions; and agreement on the basic approach to remaining subject areas (hazardous waste, oil, etc.).

Staff encouraged participants to contact them directly as needed throughout the process, in addition to participating in the stakeholder meetings.

Strawmen

Staff provided two "strawmen" at the second and third meetings, which contained options and recommendations. Staff also provided revised and expanded document after the last meeting, in the middle of October, so that group members would have another opportunity to comment. The agreement reached at the third meeting was not reflected in these last comments received.

None of these documents were formal Department recommendations, and it was emphasized that all were subject to change based on comments received and on further Department review, prior to issuance of the report.

Materials

Before the first meeting, the Department set up a resource web page for the Vessel Discharge Group at: http://www.maine.gov/dep/blwq/topic/vessels/index.htm. This page included information about Chapter 79 and included a link to a "materials" web page. The web pages were added to through out the process, with materials from Department staff and group members, including meeting summaries, handouts, and attendance lists from meetings, as well as Maine, federal, and international law materials, information on activity in other states, studies and reports, off-site links, and news articles.

The report is available on the web at: http://www.maine.gov/blwq/topic/vessels/report.htm

6. PLAN SUMMARY

After reviewing the range of potential impacts from vessel discharges, the information available on issues in Maine, activities in other states, and comments and discussion from the Vessel Discharge Group and others who provided information in response to inquiries, the Department has identified three basic areas that should be strengthened in regard to vessel discharges: oversight, information, and public education. The recommendations in this report are intended to address these areas and identify a number of tools such as registration, limited licensing, no-discharge zones, and reporting of intended and unintended discharges.

OVERVIEW

Create a minimal program to address discharges from vessels, conducting activities in the areas of education, licensing, information collection and analysis, and enforcement. Specific recommendations address the following.

All vessels

- Apply to EPA for federal no-discharge zones (federal NDZs) for blackwater. See requirements contained in PL 1999, ch. 655.
- Clarify that the discharge of sludge is prohibited.
- Support the existing recommendations in the State of Maine Action Plan for Managing Invasive Aquatic Species.
- Require the Department to consider and report back to the Natural Resources Committee concerning issues related to air emissions from vessels.

Commercial passenger vessels

- Multi-issue -- create a registration program for all commercial passenger vessels.[40]
- Blackwater -- require reporting of blackwater spills from large commercial passenger vessels[41], and consider seeking a federal law change expressly to allow greater state regulation of blackwater discharges.
- Graywater -- create no-discharge zones under state law (state NDZs) for graywater discharges from large commercial passenger vessels within federal no-discharge zones (federal NDZs). Extend Maine wastewater discharge licensing requirements to graywater discharges from large commercial passenger operating outside NDZs. Require reporting of spills from large commercial passenger vessels.

[40] The definitions for "commercial passenger vessel, and large and small commercial passenger vessel, are proposed. They are based upon definitions in Alaska's statutes. "Commercial passenger vessel" means a vessel that carries passengers for hire except that "commercial passenger vessel" does not include a vessel that:

A. Is authorized to carry fewer than 50 passengers;

B. Does not provide overnight accommodations for at least 50 passengers for hire, determined with reference to the number of lower berths; or

C. Is operated by the United States or a foreign government.

[41] "Large commercial passenger vessel" means a commercial passenger vessel that provides overnight accommodations for 250 or more passengers for hire, determined with reference to the number of lower berths.

DETAIL (BY ISSUE)

1. MULTI-ISSUE

Registration program. Create a registration program for commercial passenger vessels to allow the collection of basic and ongoing information concerning discharges to Maine waters.

2. BLACKWATER (SEWAGE)

A. No Discharge Zones (NDZs). Apply for federal NDZ status for those areas that are expected to have adequate pumpout facilities within the timeframe of Chapter 655. The first group includes Casco Bay.

Apply for a second group when pumpout facilities are available, confirming the second list when the Department reports back to the Legislature January 15, 2005. Require under state law that large commercial passenger vessels report blackwater spills to the Department.

B. Outside NDZ areas

i. **Reporting.** Require that large commercial passenger vessels report blackwater spills to the Department.

ii. **Seek change in federal law.** Consider seeking an exception for Maine in federal law that would allow the State to license large commercial passenger vessels for blackwater discharges in State waters pursuant to the Maine Waste Discharge Law. The Department may also consider recommending more broadly applicable changes to the federal program for all states through the Environmental Council of States (ECOS) or other appropriate mechanism.

3. GRAYWATER

A. No Discharge Zones

i. **State NDZ for graywater (large commercial passenger vessels only).** Through a change in state law, prohibit discharges of graywater from large commercial passenger vessels, within the same areas designated as No Discharge Zones (NDZs) for blackwater under federal law.

ii. **Reporting.** Require that large commercial passenger vessels report graywater spills to the Department.

B. Outside NDZ areas

i. **Licensing.** Pursuant to existing statute, prohibit discharges of graywater from large commercial passenger vessels without a waste discharge license. Employ existing standards unless the department determines that other procedures or standards are appropriate.
This recommendation does not require a statutory change. The Department has existing statutory authority to license graywater discharges from large commercial passenger vessels.

ii. **Reporting.** Require that large commercial passenger vessels report graywater spills to the Department.

4. AIR

Legislative reporting requirement. Require that the DEP (Air Bureau) report back to the Legislature's Natural Resources Committee on any recommendations concerning air emissions from vessels by January 1, 2005.

5. INVASIVE SPECIES

Begin to address the gap. Begin to address the management gap in invasive species programs for tidal and marine waters. Support the recommendations in the "State of Maine Action Plan for Managing Invasive Aquatic Species" (October 10, 2002), Objective 1, Strategy 1A, or these recommendations as further amended by Land & Water Resources Council, and Interagency Task Force on Invasive Aquatic Plants and Nuisance Species. See Appendix D.

6. SOLID WASTE

Amend 38 M.R.S.A. 417(3) to clarify that the discharge of septage and sludge to Maine waters is prohibited.

7 and 8. OIL, HAZARDOUS WASTE

No suggested changes to statute or rule at this time.

7. DISCUSSION OF PLAN

MULTI ISSUE

The Department is concerned that there is a lack of basic information about vessel discharges, such as the types of information that had been routinely available from licensed land-based dischargers in Maine for many years. This includes information such as the location, volume, and content of discharges to state waters, the types of treatment systems being used, training level of the operator, and timely data about volume, type and location of unintended discharges. This lack of information makes oversight, assessment of potential risk, and tailoring of a program to meet the particular needs of the regulated community difficult.

A basic registration program for commercial passenger vessels with 50 or more overnight passengers is proposed.

The registration system would collect information specified by the Department such as treatment system type and capacity, passenger and crew capacity, and location and volume of discharges. It would provide funding and staff for a number of services, including public education, information for vessel owners and operators, analysis of information received, and support for licensing and enforcement. The Department would have authority to adopt rules, if necessary, to implement this program.

Draft statutory language concerning the proposed registration requirements is provided in Appendix A.

It was suggested by a participant in the Vessel Discharge Group that activity logs for discharges be required. There was also a suggestion that the "activity log" requirement be kept separate from registration, in case the proposal for registration was not adopted. The Department is concerned that sufficient resources may not be available to analyze and make appropriate use of information within such logs, without the additional resources provided by the registration program. Therefore, the Department is recommending an "activity log" requirement for large commercial passenger vessels, but has chosen to combine it with the registration program for commercial passenger vessels.

The table below compares the services/information provided by a separate "activity log" requirement, and an activity log requirement together with a registration program.

Table 3. Comparison of Activity Logs and Registration Program

Activity Log	Registration Program
1. Provide information on location and volumes of discharges, treatment technology, holding capacity, and passenger capacity.	1. SAME
	2. Analysis of information received in activity logs, and oversight of non-submission of logs.
	3. Increased information for vessel owners and operators concerning state requirements.
	4. Support of enforcement of state requirements.

	5. Oversight concerning existence of solid and hazardous waste disposal plans.
	6. Support, oversight, and education related to licenses for the discharge of graywater from large commercial passenger vessels.
	7. Analysis or response related to notification of blackwater and graywater spills.
	8. Design of modeling studies. Additional funding would be required to conduct such studies.

A minimal vessel discharge program such as that described above would require additional funding and creation of at least one position (ES III). An existing position is not available at the Department. The ES III would be charged with running the registration program as well as licensing graywater discharges, providing public education and information to the regulated community, processing activity logs, conducting any necessary rulemaking, and related activities. Considering the funding required for an ES III, dividing by the number of vessels in two size categories, and allowing a lower fee for the small commercial passenger vessels, the proposed *annual* registration fee would be:

- $1,000 for ships from 50 up to 250 overnight passengers; and
- $3,100 for ships 250 or more overnight passengers.

This assumes registration of all commercial passenger vessels with 50 or more overnight passengers, using the definitions in LD 1158, and based upon the current number of 23 ships operating in Maine.

During the first year or two of a vessel discharge program, the Department would expect to emphasize education rather than enforcement. The registration fee described above would not support the modeling study or additional enforcement. The Department has not factored the modeling cost into the registration fee because it is not an ongoing cost, and it is not possible for the Department to provide a reliable estimate of the cost at this time. It could be between $10,000 and $100,000 depending upon what work is done.

The potential impact of additional fees on the industry, particularly in comparison to competing ports in the northeast, as well as ports in the northwest, is an important consideration. Maine has a small but growing cruise ship industry that has been experiencing substantial growth in the past few years. Currently, Maine's port fees range from the low end to the middle of the spectrum, with some Maine ports charging less than others. Ports charging higher fees often provide more services.

Alaska has 5 times the ship traffic of Maine, with approximately 470 trips in 2003. The growth in traffic has not slowed since the environmental fees were imposed in 2001[42]. The large number of ship visits and higher environmental fees generated revenue for Alaska in excess of $747,000 in 2003, paying for several full time staff, support staff, independent wastewater analysis, and support of the Science Advisory Panel which reviews technical information and writes many summary reports[43].

A registration fee in Maine as previously described would have little effect on the fee distribution if a ship visits more than one port or if it comes to Maine more than once. Appendix C contains detailed

[42] North West Cruise Ship Association, "Alaska Cruise Sales Rebounding" (http://www.alaskacruises.org/home/rebound.cfm, Vancouver, BC, CAN, 2002).
[43] Alaska Department of Environmental Conservation "Frequently Asked Questions" (http://www.state.ak.us/dec/press/cruise/documents/faq2.htm, Juneau, AK, 2003).

information concerning fees paid by commercial passenger vessels in various ports, including those in Maine.

Using an example of a 900-foot, 1500-passenger, 77,000-ton cruise ship, the port costs range from $2,300 *per port visit* in Juneau Alaska to $18,472 *per port visit* in Halifax, Nova Scotia. In addition to the basic port fees, Alaska charges a $1,750 environmental registration fee *per visit to Alaska waters* for this size vessel. If the cruise ship visited Alaska waters three times during the season, the fee would be $5,250. In contrast, the Maine registration fees described above ($3,100) for the same size ship would only be assessed once per year, even if the ship entered Maine waters multiple times, and/or visited multiple ports.

The Department also expects to work with the Clean Government Initiative to assess needed improvements in discharge technology on state-owned vessels. That can be done within existing resources.

BLACKWATER

- PL 1999, ch. 655 requires the Department to submit a list of areas recommended for designation as federal NDZs, within which all discharge of blackwater is prohibited from all vessels, by January 15, 2004. The Department took advantage of the stakeholder process for vessel discharges to obtain input from the group on a proposed list. Although there appeared to be general agreement on the need for NDZs, there was no agreement on an appropriate schedule. The Department has proposed a minor change to the Chapter 655 schedule, in order to reflect the anticipated schedule for availability of boat pump-outs.
- The standards to which marine sanitation devices (MSDs) are designed are old, and intended to produce effluent with a higher level of bacteria than is currently allowed from licensed land-based dischargers to marine waters in Maine. Also, there are no ongoing monitoring requirements to help detect inadequately functioning systems, training requirements for operators, reporting requirements to provide information concerning spills, or other requirements that are routinely required of licensed dischargers in Maine.
- Large commercial passenger vessels have the potential to release a large amount of contaminated effluent in the event of a malfunction.
- The large commercial passenger vessels have the ability to hold blackwater and discharge it outside of state waters. Most have agreed to do this now, based upon International Council of Cruise Lines (ICCL) guidelines, although the guidelines allow for discharge inshore if a ship has advanced treatment technology, as determined by the industry. The Department acknowledges that some of this technology is very good, and supports its development. However, that does not remove the need for state oversight of discharges within state waters.

A. No Discharge Zones (NDZs)

As part of the Vessel Discharge Group process, the creation of No Discharge Zones (NDZs)[44] was considered as one of the options to addressing blackwater discharges. Federal NDZs apply to all vessels with installed heads. In order to propose a federal NDZ, the Department must determine that (1) the waterbody needs additional protection and (2) that there are adequate pumpout facilities to serve the transient boat traffic.

[44] Sometimes also referred to as a "no-discharge area" or "NDA".

Chapter 655 requires that the Department submit a draft list to the Legislature by January 2004, and apply to the U.S. Environmental Protection Agency (EPA) by January 2005. Informal and formal processing of the application by EPA may take up to a year.

In order to receive a no-discharge zone designation for a particular waterbody, the Department must determine that the waterbody needs additional protection and that there are adequate pumpout facilities to serve the transient boat traffic. Pumpout service for commercial passenger vessels is not a requirement under federal law. As part of the 2001 Maine Pumpout Plan (see Appendix B) the Department created an inventory of the roughly 350 navigable harbors along the coast and ranked those harbors according to the following criteria.

- Existing Point Sources, including municipal treatment plants, industrial sources and sewer overflows.
- Water Quality, including water classification attainment and bacteria levels.
- Sensitive Resources, including shellfish areas, endangered species habitat, and natural areas.
- Boat Services, including marinas, boatyards, fuel docks and public launching areas.
- Number of Boats, consists of a rough estimate of all boats using the harbor.
- Flushing, consists of a rough description of the harbor's hydrographic aspects.
- Existing Pumpouts, consists of a evaluation of the number of pumpout stations serving a harbor.

The ranking led to the development of the 100 priority harbors for pumpout service. The Department's goal is to ensure there is a pumpout station within 4 nautical miles of the 100 priority harbors.

The Department sought input from the Vessel Discharge Group on a first-draft list[45] of possible areas for NDZ designation, drawn from the priority harbors. The Department received suggestions to accelerate the process in regards to Casco Bay, by applying before the Chapter 655 deadline of January 15, 2005. The Department does not feel it has the necessary resources to accelerate this process without unacceptably weakening existing programs. It was also suggested that Casco Bay be used as a pilot project in order to identify implementation problems and improve education methods prior to designating additional areas. The Department believes that using Casco Bay as a pilot, and making appropriate use of the information gained from the pilot process, would require at least two years between the designation of Casco Bay as a NDZ and further designation of other areas. However, this would push the second set of designations into 2007, which many on the stakeholder group considered an unacceptable delay of the schedule set out in Chapter 655. The need to actively gain the support of affected coastal communities prior to designating NDZs was also noted by a member of the stakeholder group. The Department strongly agrees with this comment.

Based on a review of the data and sensitivity to the concerns of the stakeholder group, the Department expects to recommend that a group of waterbodies be in a first round of No Discharge Zone applications. Included in the list are most of the major boating harbors of the State and coincidentally, the harbors most frequented by large commercial passenger vessels. The Department expects to recommend that all of Casco Bay be designated a No Discharge Zone. Twelve of the priority harbors are in Casco Bay, and treating the entire bay together will support more efficient administration of the program and is consistent with the management of the Bay as part of the National Estuary Program[46]. Casco Bay has the highest density of recreational boat traffic in the State. The balance of the waterbodies were identified as priority

[45] The draft list of up to 50 significant harbors or bays required by PL 1999, ch. 655.

[46] In 1990, Casco Bay was designated an "estuary of national significance" and included in the U.S. Environmental Protection Agency's National Estuary Program, established in 1987 to protect nationally significant estuaries threatened by pollution, development or overuse. It is currently one of only 28 identified estuaries in the nation.

harbors in the 2001 Maine Pumpout Plan and upon further analysis were found to warrant additional protection as no discharge areas due to their environmental sensitivity, water quality and boat traffic.

In addition to the initial list of No Discharge Zones, the Department feels that a number of other harbors also warrant designation due to environmental and boat traffic concerns. However, these waterbodies are not expected to have adequate pumpout facilities by January 15, 2005, so that it would not be possible for the Department to successfully apply to EPA for designation of the waterbodies as NDZs by that date. In order to have the flexibility to continue to recommend waterbodies for No Discharge Zone designation as appropriate at a later date, the Department is recommending an amendment to Chapter 655, to allow for later application for these waterbodies.

Pursuant to LD 1999, ch. 655, the Department will report to the Legislature's Natural Resources Committee by January 15, 2005 concerning plans for enforcement of no-discharge zones in the State.

B. Outside NDZ areas

Outside of NDZ areas, the Department feels that Maine's long-term goal should be to bring large commercial passenger vessels (250 or more overnight passengers) within the State's existing waste discharge licensing system. If it is necessary to discharge to state waters, the vessels should be subject to the same standards and controls as other dischargers of sewage to state waters. This would arguably require a change in federal law. The Department proposes building a case, based upon registration information and other sources, for either seeking express authorization for Maine to allow appropriate licensing, or a broader solution for coastal states working through ECOS, or both.

C. Memoranda of Understanding and Industry Guidelines

The Department is not proposing to seek memoranda of understanding (MOAs) with representatives of large commercial passenger vessels at this time. The Department feels that such agreements can be a useful adjunct to a regulatory program where (a) the agreements are intended to recognize members of an industry who intend to move beyond set minimum standards, or (b) or to provide a short-term stopgap measures where other tools are not available. The use of MOAs on this subject would be for the latter purpose. If Maine proceeds to establish no-discharge zones in areas of concern along the coast in the near future, as anticipated by existing legislation and the proposal in this report, then MOAs may not be of significant added value for these areas.

In general, the Department does not consider an MOA to be an adequate substitute for establishing minimum regulatory standards (licensing or a no-discharge zone) for waste discharges to waters of the State, which is the accepted and historically proven approach to discharges to Maine waters. The Department is also concerned that seeking MOAs in regards to areas outside no discharge zones would consume considerable staff time, which would be better spent on other aspects of an early vessel discharge program, such as education.

GRAYWATER

- Recent monitoring data from Alaska indicates that graywater discharges can contain as much bacteria as treated blackwater, in addition to other materials[47]. Neither the federal government nor the

[47] Morehouse, McGee, Loehr and Watson, Wastewater Sampling and Analysis for Commercial Passenger Vessels. (Alaska Department of Environmental Conservation Science Advisory Panel, November, 2002).

Department have required that graywater be treated in Maine, and it may be discharged anywhere within state coastal waters. Maine DEP has the authority to require that these discharges meet licensing requirements but the Department has not done so, having been land-focused in the past.

- The Department is particularly concerned about the potential risk posed by large commercial passenger vessels, which have the potential to release large amounts of graywater.

The Department is proposing to extend licensing, under existing statutory authority, to graywater discharges from large commercial passenger vessels. Licensing of graywater discharges from small commercial passenger vessels is not recommended at this time, as there is insufficient information to determine if such licensing is appropriate. Additional information from a registration program may allow for a re-assessment of these discharges in the future.

The licensing threshold proposed at this time, based on what is defined as a "large commercial passenger vessels" is intended to address vessels that currently have the ability to hold graywater. Ships in Alaskan waters of this size are holding their graywater or treating it prior to discharge. If a vessel has the ability to hold graywater in Maine waters, then requiring licensing of graywater discharges should not unacceptably burden interstate commerce. If a vessel of this size visiting Maine waters is determined not to have the capacity to hold graywater, the Department would expect to provisionally license it and incorporate a compliance schedule. Such provisional licensing in this narrow case is considered appropriate because the industry is essentially being licensed for the first time. And, allowing for such licensing will help to avoid commerce clause issues.

If the Department were to license a class of vessels such as large commercial passenger vessels, under the Maine Waste Discharge Law, it would employ existing licensing procedures and standards unless the Department determined that other procedures or standards were necessary in the future. It should be noted that the bacterial effluent standard currently required for land-based dischargers in Maine is 15 colonies of fecal coliform bacteria per 100 ml. This licensing standard was based upon a determination that controlling at this level was feasible for the existing land-based systems. The effluent limit is very similar to the ambient level used by the Department of Marine Resources in the protection of shellfish beds, which is the same as the National Shellfish Sanitation Plan limit.

The annual licensing fee for large commercial passenger vessel proposing to discharge graywater to state waters would be $1,200 a year, based upon current statutory provisions.[48] The Department is expecting to review fees for all categories of discharges in the near future.

AIR

Although air issues were considered (there was a presentation to the stakeholder group), there was insufficient time to address this issue. The Department is recommending that staff of the Department's Air Bureau look further into these issues, and report back to the Legislature's Joint Standing Committee on Natural Resources by January 1, 2005 with any recommended changes or actions.

INVASIVE SPECIES

The Department considers the risks of invasive species in marine waters to be important and inadequately addressed currently. However, there is an existing plan to begin to close this gap, and the Department is recommending continued support for these efforts, rather than new recommendations based upon the brief review afforded by the current process.

[48] Category: sanitary wastewater, commercial sources. See 38 M.R.S.A. § 353-B(2)(A).

John McPhedran, the Invasive Species Program Coordinator at the Department, has recently approached staff at the Department of Marine Resources (DMR) concerning implementation of the strategy outlined in the "State of Maine Action Plan for Managing Invasive Aquatic Species." The Department of Marine Resources is currently considering how best to proceed, and it is the appropriate lead agency on this issue. It may not be possible to further clarify this recommendation before the date this report is due to be submitted.

OIL

The Department is not recommending changes to statute or rule at this time.

Maine statute currently prohibits the discharge of oil or contaminated effluent without a license meeting specified statutory criteria.[49] Maine's existing statutory standard is stricter than federal law. An informal inquiry of Department staff resulted in no memory of a vessel ever applying for such a license. The approach taken by Department staff historically has been to work toward prevention of all oil discharges from vessels.

HAZARDOUS WASTE/MATERIALS

The Department is not recommending changes to statute or rule at this time.

There is an existing statutory prohibition on the discharge of hazardous matter, which includes hazardous waste, to waters of the State.[50] In addition, the Hazardous Waste Management Rules, Chapter 851.12A and Chapter 856.4E prohibit treatment and handling (which includes incineration) without a license. A discharge of hazardous matter, including hazardous waste, must be immediately reported.[51]

SOLID WASTE

There is an existing statutory prohibition against putting refuse in the water.[52] The Department is proposing the following amendment:

> **3. Refuse.** Any scrap metal, junk, paper, garbage, septage ~~septic tank sludge~~, sludge, rubbish, old automobiles or similar refuse.

During the normal use of some vessel wastewater treatment systems, sewage sludge is generated that must occasionally be wasted from the treatment system. The wasting and subsequent discharge of accumulated sludge can be planned and managed to occur offshore where the discharge will have a limited impact. Less sophisticated treatment systems do not generate sludge, so are not affected by restrictions on sludge disposal.

The change proposed would clearly prohibit the discharge of sludge, such as sludge from a marine sanitation device (MSD). Maine statutes do not appear to have a plain statement that sludge may not be

[49] 38 M.R.S.A. § 543.
[50] See 38 MRSA § 1317-A.
[51] 38 MRSA Section 1318-B
[52] See 38 MRSA 417(3).

discharged to waters of the State. The changes would also clarify the existing provision by using terms ("septage" and "sludge") that are already defined by statute in 38 MRSA 1303-C.[53]

It should be noted that the "Alaska Law" requires that the owner or operator of a commercial passenger vessel provide the Department with plans describing policies and procedures for disposing of hazardous and solid wastes. Under the proposed registration program, a vessel owner or operator would be required to certify that plans are available for the vessel, and to provide them to the Department upon request.

[53] "Septage" means waste, refuse, effluent, sludge and any other materials from septic tanks, cesspools or any other similar facilities. "Sludge" means nonhazardous solid, semisolid or liquid waste generated from a municipal, commercial or industrial wastewater treatment plant, water supply plant or wet process air pollution control facility or any other waste having similar characteristics and effect. This term does not include industrial discharges that are point sources subject to permits under the federal Clean Water Act, 33 United States Code, Section 1342 (1999).

APPENDIX A. DRAFT AMENDMENTS FOR IMPLEMENTATION OF PLAN

Amend the bill by inserting after the enacting clause and before the summary the following:

Sec. 1. 38 MRSA 347-C is amended to read:

§347-C. Right of inspection and entry

Employees and agents of the Department of Environmental Protection may enter any property at reasonable hours and enter any building or vessel with the consent of the property owner, occupant or agent, or pursuant to an administrative search warrant, in order to inspect the property or structure, including the premises of an industrial user of a publicly owned treatment works, and to take samples, inspect records relevant to any regulated activity or conduct tests as appropriate to determine compliance with any laws administered by the Department or the terms and conditions of any order, regulation, license, permit, approval or decision of the commissioner or of the board.

Sec. 2. 38 MRSA 417, sub-§ 3 is amended to read:

3. Refuse. Any scrap metal, junk, paper, garbage, septage ~~septic tank sludge~~, sludge, rubbish, old automobiles or similar refuse.

Sec. 3. 38 MRSA 432 is enacted to read:

§432. Commercial passenger vessels

1. Definitions. For the purposes of this section, unless the context otherwise indicates, the following terms have the following meanings.

A. "Coastal waters" means " all coastal navigable waters that are contained within, flow through, or border upon the State or any portion thereof, including those portions of the Atlantic Ocean within the jurisdiction of the State, up to state or international boundaries, and including all waters between Isle au Haut and Seal Island westward of a straight line between Western Ear Ledge on Isle au Haut drawn to Eastern Ledge on Seal Island."[54]

B. "Commercial passenger vessel" means a vessel that carries passengers for hire except that "commercial passenger vessel" does not include a vessel that:[55]

(1) Is authorized to carry fewer than 50 passengers;

[54] This definition is adapted from the definition of "coastal waters" at 38 MRSA 85-B(2).

[55] The definitions for "commercial passenger vessel" and "large" commercial passenger vessel are consistent with definitions in LD 1158. The definition for "small commercial passenger vessel" is written to resolve a conflict in LD 1158, and the Alaska statute on which it is based, consistent with how the statute in Alaska is being implemented. LD 1158 defined "small commercial passenger vessel" as "a commercial passenger vessel that provides overnight accommodations for 249 or fewer passengers for hire, determined with reference to the number of lower berths." However, vessels with fewer than 50 passengers should not come within the definition of "small commercial passenger vessel", given the definition of "commercial passenger vessel", which excludes vessels with fewer than 50 passengers.

(2) Does not provide overnight accommodations for at least 50 passengers for hire, determined with reference to the number of lower berths; or

(3) Is operated by the United States or a foreign government.

C. "Discharge" means any release, however caused, from a commercial passenger vessel, and includes any escape, disposal, spilling, leaking, pumping, emitting, or emptying.

D. "Graywater" means wastewater from a galley, dishwasher, bath or laundry.

E. "Large commercial passenger vessel" means a commercial passenger vessel that provides overnight accommodations for 250 or more passengers for hire, determined with reference to the number of lower berths.

F. "Sewage" means human body wastes and the wastes from toilets and other receptacles intended to receive or retain human body wastes.

G. "Small commercial passenger vessel" means a commercial passenger vessel that provides overnight accommodations for 50 to 249 passengers for hire, determined with reference to the number of lower berths.

2. Registration. The Department may require the annual registration of all commercial passenger vessels intending to enter coastal waters without regard to whether the vessels intend to discharge to these waters.

A. The Department may require that the owner or operator to submit information such as the following:

(1) Vessel owner's and operator's business and name;

(2) Maine agent for purposes of service of process;

(3) Vessel name or call sign;

(4) Port of registry;

(5) Passenger and crew capacity;

(6) Treatment system types;

(7) Holding capacity;

(8) Information concerning whether the vessel will or will not discharge within coastal waters of the State and, if discharge is intended, the nature and volume of the discharge;

(9) Certification that the vessel has a nonhazardous solid waste offloading and disposal plan and that it is available to the Department upon request; and

(10) Certification that the vessel has a hazardous waste offloading and disposal plan and that it is available to the Department upon request.

The Department may also require that activity logs be submitted for each large commercial passenger vessel operating in coastal waters of the State. Activity logs must indicate the approximate location of each discharge, type and volume of each discharge, and system used to treat the discharge if any within coastal waters of the State.

B. Vessel registration must be submitted to the Department by March 1, 2005 and subsequently by March 1 of each year or such other date as provided by the Department in rule.

C. The operator or owner of a commercial passenger vessel operating in the coastal waters of the State shall submit the following annual fees to the Department:
(1) $1,000 for a small commercial passenger vessels and
(2) $3100 for a large commercial passenger vessel.

The fee must be submitted with the registration. This fee may be adjusted by the Department on an annual basis according to the United States Consumer Price Index established by the federal Department of Labor, Bureau of Labor Statistics. These adjustments may be compounded and assessed at an interval greater than one year if the commissioner determines that such periodic adjustments lower administrative costs for the Department and continue effective public service.[56]

D. Innocent passage. This subsection does not apply to a commercial passenger vessel that operates in the coastal waters of the State solely in innocent passage. For purposes of this section, a commercial passenger vessel is engaged in innocent passage if its operation in coastal waters of the State, regardless of whether the vessel is a United States or foreign-flag vessel, would constitute innocent passage under the:

(1) Convention on the Territorial Sea and the Contiguous Zone, April 29, 1958, 15 U.S.T. 1606; or

(2) United Nations Convention on the Law of the Sea 1982, December 10, 1982, United Nations publication No. E.83.V.5, 21 I.L.M. 1261 (1982), were the vessel a foreign-flag vessel.

3. Prohibition of graywater discharge. A large commercial passenger vessel may not discharge graywater within coastal waters of the State designated by the United States Environmental Protection Agency as no-discharge zones or areas for blackwater pursuant to Clean Water Act Section 312.

4. Report of unauthorized discharge

A. The owner or operator of a large commercial passenger vessel who becomes aware of a discharge of graywater within a no discharge zone or an unlicensed discharge of graywater outside a no discharge zone shall immediately report that discharge to the Department. The owner or operator must submit a written report concerning the discharge to the Department within 30 days.

B. The owner or operator of a large commercial passenger vessel who becomes aware of a discharge of blackwater within a no discharge zone or a discharge of blackwater outside a no discharge zone that is not in conformance with federal law shall immediately report that discharge to the Department. The owner or operator must submit a written report concerning the discharge to the Department within 30 days.

5. Other requirements. This section does not relieve the owner or operator of a commercial passenger vessel from other applicable state or local requirements.

6. Rules. The Department may adopt rules to carry out the purposes of this section. Rules adopted pursuant to this section are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A.

Sec. 4. 38 MRSA 464, sub-§4(A)(6) is amended to read:

(6) New discharges of domestic pollutants to the surface waters of the State that are not conveyed and treated in municipal or quasi-municipal sewage facilities. For the purposes of this subparagraph, "new discharge" means any overboard discharge that was not licensed as of June 1, 1987, except those discharges that were in continuous existence for the 12 months preceding June 1, 1987, as demonstrated by the applicant to the Department with clear and convincing evidence,

[56] This text concerning the Consumer Price Index is based upon 38 MRSA 352(2-A).

or discharges from vessels. For purposes of licensing, the Department shall treat an increase in the licensed volume or quantity of an existing discharge or an expansion in the months during which the discharge will take place as a new discharge of domestic pollutants;

Sec. 5. PL 1999, ch. 655, sec. A-1, paragraph 7 is amended to read:

7. No later than January 15, 2005, report to the joint standing committee of the Legislature having jurisdiction over natural resources matters on the feasibility of implementing a no-discharge zone for all the territorial waters of the State. The Department may also recommend that application be made for additional no-discharge zones including all or part of the coast.

Section 6. Report. The Department of Environmental Protection shall submit a report to the Joint Standing Committee on Natural Resources by January 1, 2005 concerning issues related to air emissions from vessels. The report shall include draft legislation necessary to implement any proposal. The Joint Standing Committee on Natural Resources may report out legislation during the First Regular Session of the 122nd Legislature relating to air emissions from vessels.

Section 7. Allocation. The following funds are allocated from Other Special Revenue to carry out the purposes of this Act.

ENVIRONMENTAL PROTECTION,
DEPARTMENT OF

Maine Environmental Protection Fund

Initiative: Provides funds to support administration of a Vessel Discharge Program. This allocation is intended to provide support for an Environmental Specialist III position and related all other to administer this program, including licensing, registration, public education, and other related duties.

	2004-2005
Position	1.0
Personal Services	63,715
All Other	6,374
	70,089

APPENDIX B. 2001 MAINE PUMPOUT PLAN

Coastal Pumpout Plan

2001 to 2005

Martha Kirkpatrick, Commissioner

Report Prepared by:
Pamela Parker
Pumpout Grant Program
Bureau of Land and Water Quality

September 21, 2001

STATE OF MAINE
COASTAL PUMPOUT PLAN
September 21, 2001

Purpose:

In April, 2000 the Legislature enacted PL 1999, Chapter 655, "An Act to Rid Maine's Waters of Ocean Vessel Sewage". Part A, Section A-1(3) required the Maine Department of Environmental Protection (DEP) to develop a plan for the construction, renovation or maintenance of pumpout facilities adequate to meet the needs of watercraft using the coastal waters of the State. The plan is to be submitted to the joint standing committee of the Legislature having jurisdiction over natural resource matters. The purpose of this document is to fulfill that requirement.

This document provides a brief history of the Maine Pump Out Grant Program (PGP), an overview of the recreational boating context, the methodology for developing the harbor priority list, the ranking system and completed ranking, and the year-by-year plan for the PGP. Once completed in 2005, the PGP will have installed approximately 40 new pumpout stations, and provided at least 4 mobile pumpout vessels. resulting in most harbors along the coast of Maine being within 4 miles of a pumpout station. In addition, the PGP will have conducted an extensive public education plan to encourage boat owners to use the pumpout systems, conducted regular maintenance inspections of the pumpout systems and provided marinas with technical and financial support to help maintain their systems. Finally, this plan calls for the DEP to apply for "No Discharge Area" designations for selected harbors and bays in 2004.

Background:

Maine has gone to significant lengths to protect its shoreline and coastal waters through the regulation of point source pollution, management and removal of combined sewer overflows and regulation of coastal land development. Although significant strides have been made to clean up the point sources of pollution, an underlying and more difficult problem of non-point source pollution is often revealed. Approximately 202,616 acres of shellfish harvesting areas (10.7% of the total) are closed to shellfishing due to the threat of bacterial contamination. Stormwater, urban runoff, failing septic systems, illegal discharges, and mobile source discharges from boats cause these closures, resulting in an estimated loss of $100 million dollars of revenue within the state per year. In addition, some harbors become so polluted in the summer that swimming and other in-water activities become unappealing or risky due to waterborn pathogens.

Many of the point sources of pollution are well regulated by the Clean Water Act and the State's water quality laws, as well as regulations through the Coast Guard, the DEP, and the United State Environmental Protection Agency (USEPA). Maine has begun to address stormwater contamination with an aggressive combined sewer overflow elimination plan, the enactment of the Stormwater Management Law in 1998, and continuing efforts to identify and eliminate failing or illegal domestic waste water systems. State environmental laws such as the Mandatory Shoreland Zoning Act and the Natural Resources Protection Act are designed to control the development of sensitive coastal areas and to limit the amount of non-point source pollution. The state's Small Communities Grant Program (SCGP) funds the repair or replacement of many failing or illegal systems every year. Since its beginning in 1982, the SCGP has repaired or replaced approximately 3,500 systems. The Overboard Discharge Grant Program (ODGP) is designed to eliminate approved discharges to targeted shellfish areas so those areas may be opened for harvesting. Since 1991, the ODGP has removed over 170 systems and facilitated the opening of 4,500 acres of shellfish harvesting areas.

One of the sources of bacterial pollution that is not well controlled in Maine comes from the illegal discharge of sewage from cruising and fishing boats. Between 1970 and 1997, the number of registered boats on the Maine coast more than tripled to over 56,000. Of the registered boats in coastal waters, it is estimated that approximately 5,900 used marine sanitation devices (MSDs) of some kind. These numbers do not include the significant transient boat traffic estimated to be nearly 8,000 boats per year, almost all of which are cruising boats equipped with MSDs. The

percentage of those nearly 14,000 boats that are equipped with holding tanks (MSDIIIs) is unknown but is estimated to be nearly 50%.

Past Work:

Since 1993, Maine has worked toward increasing the availability of boat pump-out stations along the coast and increasing the public's awareness of the facilities through the Federal Clean Vessel Act funding. Until 1998, the grants were administered by the State Planning Office (SPO). Starting in 1999, the grant program has been administered by the DEP. The following is a summary of the Maine pump-out grant program's accomplishments:

- Extensive inventory of available pump-out services available and need survey completed (1994).
- The Maine Marine Sewage Management Plan (1995).
- 25 new pump-outs funded (stationary and portable).
- A mobile pump-out boat for Casco Bay funded along with operating costs (1997). (The boat is managed by the Friends of Casco Bay).
- Printed and distributed education and outreach materials, including a booklet for marinas and municipalities and laminated list of pump-out stations along the coast.

As part of the previous grant agreement, SPO had committed to siting and funding a mobile pump-out unit in Penobscot Bay. Because of personnel changes, and the part-time nature of the SPO program, this objective was not achieved. DEP is committed to following through with this objective in addition to others outlined below.

In 1995, SPO compiled data on existing boat pump-outs and the number of vessels potentially having and using holding tanks in Maine's waters. This information formed the basis for the 1995 Maine Marine Sewage Management Plan (MMSMP). The plan summarized the data on registered vessels, estimated the number of boats that would be equipped with MSDs and set some goals for the pumpout grant program.

After the Clean Vessel Act was reauthorized in 1998, the state had the opportunity to re-apply for the grant program and significantly revamp the program. After discussion, DEP and SPO concluded that the program was best suited for administration through the DEP. The DEP applied for and received approval for a substantially larger grant program. Details of the grant proposal and award are available from the DEP PGP administrator.

Current Status:

The Maine PGP has been successful in a number of ways but there is plenty of work yet to be done due to rapidly increasing recreational boat traffic along the coast. The PGP has almost tripled the number of pump-outs available on the coast and, through education and outreach materials, has increased the level of pump-out use throughout the coast. The activities of the Friends of Casco Bay, funded in part by the PGP, have dramatically increased awareness of the water quality impacts of sewage discharges and the use of pump-outs in Casco Bay. DEP continues to make strides on the water quality front by assisting the Department of Marine Resources in the opening of shellfish harvesting areas, and by upgrading the water quality classifications for certain coastal waters to prevent future discharges.

The actual use of pump-outs in Maine is not well documented, but is estimated to represent only a small fraction of all boats with holding tanks. For instance, the Friends of Casco Bay pumpout boat performed around 750 pumpouts during 2000. Although this volume is a significant increase from the previous year, it represents serving only a fraction of the boats located in the service area. Reports from stationary pumpout operators in the same area indicate light use of the stations. This information begs the question of what is happening to the rest of the waste. We fear that much of it is going directly into the coastal waters. This evidence indicates that an extensive education and outreach plan, targeted at recreational boaters, will be essential to the effectiveness of the program

Maine continues to see growth in tourism and transient boat traffic. Since 1994 the total number of registered vessels has increased 18%, with a corresponding increase in the estimate of coastal vessels with MSDs. In 1994, SPO estimated transient traffic to be less than 5,000 boats per season. A brief informal survey by DEP in 1998 indicated

estimated transient traffic at between 5,000 and 8,000 vessels per season. Because transient traffic normally consists of cruising boats, the estimated percentage with MSDs should be higher than general registered vessels.

Priority Development:

Historically, the state has relied on facilities deciding on their own to install a pump-out rather than asking them directly to be the “host”. This has resulted in sporadic and inconsistent siting of facilities along the coast. The DEP believes the more direct approach outlined in this plan will be more effective. In the 1995 MMSMP, SPO determined that the coastline contained at least 100 "significant" harbors. The harbors are considered "significant" due to the number of boats normally sheltered, the harbor flushing capability, the presence of sensitive habitats, and the presence or absence of other known sources of pollution. SPO determined that these 100 harbors should be targeted for pumpout installation.

To expand upon with this concept, the DEP compiled an inventory and set out to prioritize the roughly 360 recognized harbors along the vast coast of Maine. The harbor inventory was generated using well known cruising guides, and although probably not the definitive list of all anchorages, we are confident it represents at least 98% of those recognized by cruising boaters. DEP worked with an informal advisory group to specify criteria that were essential to determine a harbor's "significance" in terms of boating patterns and pumpout systems and how this "significance" translated into the harbor's priority. The group also worked to create a formula to generate a ranking system. The criteria were assigned a numbered scale and data were gathered to complete the database. In order to simplify the criteria, the group decided to use an abbreviated, somewhat qualitative, scale. The criteria descriptions and scale, and ranking formula are in Appendix A. The ranked Pumpout Priority List is in Appendix B. A map of the priority harbors can be found in Figure 1.

After reviewing the pumpout priority list and discussing the feasibility of pumpout installation in some more remote areas of the coastline, *the DEP believes that revising the goal from a pumpout in all the priority harbors to having a pumpout within 4 miles of the priority harbor is appropriate and attainable*. The revised goal is hinged on the effectiveness of the education and outreach plan in convincing boaters to properly dispose of their waste water. If the boater is inclined, the DEP believes most boaters would be willing to travel up to 1 hour to properly dispose of waste water and most cruising vessels could travel at least 4 miles within an hour. Further, it may be impractical to try to site a pumpout system in some areas. Modifying the goal of a pumpout in every priority harbor also allows pumpouts to be sited in less remote areas and provides more flexibility easing pumpout maintenance and operation. Currently 51 priority harbors, and 145 harbors in all, are within 4 miles of a pumpout station.

In addition to the Pumpout Priority List, DEP has committed to enforcing the provisions of 38 M.R.S.A. §423-B. This section of law requires coastal marinas over a certain size to have operational pumpouts or DEP approved contractual agreements for pumpout service. All coastal marinas having a total of 18 or more slips and/or moorings for boats greater than 24 feet in length meet the threshold for pumpout requirement.

The DEP has analyzed a number of resources to develop a list of facilities that appear to trigger the pumpout requirement in §423-B. Currently, there appear to be 25 facilities that trigger the threshold that do not have pumpout stations. Of those 25 facilities, 23 of them are located in a priority harbor. Pumpout installation at these 25 facilities will result in 13 more priority harbors receiving a pumpout station. As of July 15, 2001 all of the facilities subject to the requirements of §423-B have been contacted by mail, notified of the legal requirements, given the opportunity to correct any errors in the data, and required to install a pumpout station by May 2002. Any facility that refuses to comply will be subject to enforcement action. A map of the existing and required pumpout stations can be found in Figure 2.

All facilities that have installed a pumpout system and are subject to §423-B are also required to maintain their system in good working order. Facilities with pumpouts that are not subject to the requirements of §423-B but have received grant funds for their pumpout system are required to maintain their systems or refund a portion of the grant money they received. The DEP will be conducting regular inspections of all pumpout systems to ensure that they function properly.

Once all facilities required to have a pumpout have installed one or have an approved contract for pumpout services, there will be 48 priority harbors still without a pumpout station within the harbor itself. However, only 31 will not have a pumpout station within 4 miles. These harbors do not have any facility required to have a pumpout station and may not have any obvious hosts capable of installing a system. The PGP project manager will work closely with any facilities in the targeted harbors and the towns to find a way to install a pumpout system. Several of these priority harbors may be able to be served by a centrally located pumpout system reducing the pumpout system installation needs to less than 31. A tabular breakdown of this information is provided below.

Pumpout Needs

Priority harbors	100
Priority harbors with existing or required pumpouts	52
Priority harbors within 4 miles of existing or required pumpout	17
Priority harbors not within 4 miles of existing or required pumpout	31

The eventual outcome of the pumpout plan will be pumpout stations in approximately 100 harbors along the Maine coast and pumpouts in the major lakes by December, 2004. Further, the DEP estimates that over half of all the harbors along the coast of Maine will have a pumpout station within 4 miles.

Finally, PL1999 Chapter 655 requires that the DEP apply to the USEPA for "No Discharge Area" designation for appropriate harbors and bays and prepare a report for the State legislature regarding feasibility of a statewide "No Discharge Area". "No Discharge Area" is a federally designated body of water that prohibits the discharge of treated and untreated boat sewage. Federal Law prohibits the discharge of untreated sewage from vessels within all navigable waters of the U. S., which include territorial seas within three miles of shore. If a harbor or bay is designated a "No Discharge Area" all vessels must use a holding tank for their waste water. Use of other marine sanitation devices is not allowed.

Yearly Plans:

2001
Contact all facilities required by section §423-B to have a pumpout (approximately 25). (Completed)
Schedule installation of pumpouts at these required facilities.
Conduct inspections of all existing pumpouts.
Install mobile pumpout vessels in Penobscot Bay and Mount Desert Island.
With the help of the advisory group, develop an education and outreach plan for boat owners to encourage the use of pumpouts.
Implement education and outreach plan.

2002
Evaluate remaining 31 priority harbors without pumpouts for potential "host" facilities.
Contact potential "host" facilities.
Schedule installation of at least 10 new pumpout facilities.
Conduct inspections of all existing pumpouts.
Implement education and outreach plan and evaluate.

2003
Evaluate remaining priority harbors without pumpouts for potential "host" facilities particularly targeting those without a pumpout within four miles of the harbor.
Contact potential "host" facilities.
Schedule installation of at least 10 new pumpout facilities.
Conduct inspections of all existing pumpouts.
Prepare report to the legislature regarding status of this plan and plans for enforcing "No Discharge Zones" in the state.*

2004
Apply to the USEPA for "No Discharge Area" designation for appropriate harbors and bays.*
Prepare report for State legislature regarding feasibility of a statewide "No Discharge Area".*

* Required by PL1999 Chapter 655

Appendix A
Ranking Formula and Criteria

In order to create a fairly objective prioritization of all the harbors in Maine, the pumpout advisory group selected critical criteria then developed a formula to use those criteria. The criteria were narrowed from an initial list of over 20 to 8 for simplicity. The group then decided to use a fairly gross scale, again for simplicity, with the highest score receiving the highest priority. The logic behind criteria and the scale for each are detailed below.

Ranking Criteria:

A. Existing Point Sources

Other point sources of pollution need to be considered in the prioritization because they can impact the overall water quality and impacts on sensitive resources. Removal of any pollution from boats may incrementally improve the water quality but it may not result in significant changes if point sources are also present. Therefore, if a harbor did not have other point sources of pollution, it may be more sensitive to improvements resulting from increased pumpout use. The point sources evaluated included municipal treatment plant discharges, combined sewer overflows, industrial discharges and overboard discharges. The DEP used the GIS system to determine how many different types of point sources were located in the harbor, and that number was then translated into a value as follows.

No point sources = 3 points
1 type of point source = 2 points
2 types of point sources = 1 point
All types of point sources = 0 points

B. Water Quality

The current water quality of a harbor was also deemed an important criterion. However, in this case, because the majority of coastal waters are only impaired by high bacteria levels, the group determined that waterbodies not attaining water quality standards should receive a higher score. This conclusion was based on the premise that boats, although certainly not the only source of bacteria to harbors, could significantly impact the harbor water quality. The DEP used water quality data from our own sampling efforts as well as extensive data provided by the Department of Marine Resources (DMR) to determine whether the harbor was meeting water quality standards. The data from DMR has been statistically evaluated as accurate 90% of the time. Water quality scores for bacteria that are below 15 colonies per 100 milliliters meet water quality standards for shellfish harvesting, a designated use of all marine or estuarine waters of the state. Scores of 15 to 30 col/100ml were determined to be in marginal compliance, waters scoring over 30 col/100ml were determined to not be attaining standards. Water bodies that did not have data were assumed to be attaining standards.

Attaining standards (0-15col/100ml) = 1 point
Marginal attainment (>15-30 col/100ml) = 2 points
Non-attainment (>30 col/100ml) = 3 points

C. Sensitive Resources

The group felt it essential to account for the impacts of potential pollution from boats by evaluating the presence of sensitive natural resources in the harbor. The resources evaluated were: shellfish harvesting areas, aquaculture leases, endangered species habitat, and state identified natural areas. The criterion was set up so the higher the number of natural resources in the harbor, the higher the score. The DEP used GIS data from DMR and other projects done by the DEP to evaluate the number of resources in each harbor.

No resources = 0 points
Few resources (2 or less) = 1 point
Some resources (3-4) = 2 points
Many resources (>4) = 3 points

D. Boat Services

The group felt that harbors that offered more services would be more likely to see higher levels of transient boats and would be both potentially more impacted by those boats as well as being more likely to be able to provide pumpout services. This criterion was evaluated using references to facilities provided by cruising guides that were updated by recent periodicals.

No services = 0 points
Limited services (Ex. moorings or restaurant only) = 1 point
Some services (Ex. Moorings/slips, gas, food, repairs) = 2 points
All services = 3 points

E. Number of boats

Obviously the number of boats that can visit a harbor at one time significantly affects the potential impact boaters could have on the water quality in the harbor, and it is difficult to know how many of those boats have installed heads. Because little data exists on the actual number of boats that frequent each harbor, the group had to make large groupings. This factor has the greatest variability and is subject to the most uncertainty of all of the criteria.

Few boats (less than 10) = 1 point
Some boats (10-30 boats) = 3 points
Many boats (over 30) = 5 points

F. Flushing

The amount of water that moves in an out of a harbor can drastically affect the potential impact of boaters on the water quality. Actual flushing calculations are very involved and require significant modeling. However, for the purpose of this ranking, the DEP engineers felt that 4 basic divisions would adequately segregate the basic flushing characteristics of the harbors.

Open ocean, large embayment or deep open mouthed harbors = 1 point
Large embayment, large mouthed-shallow harbors, or high flow estuaries (rivers) = 2 points
Small embayment, enclosed mouth moderate-deep = 3 points
Low flow estuaries, enclosed mouth shallow = 4

G. Existing pumpouts

Harbors with existing pumpouts, although no less sensitive, are already able to handle a certain amount of boat waste. The group determined that the impact of the number of boats (score under "E") can be directly modified by the presence of existing pumpouts. The group decided that the value for the existing pumpouts should be a multiplier for the number of boats.
1 existing pumpout = multiply (E) by .75
2 or more existing pumpouts = multiply (E) by .50

Ranking Formula:

The advisory group came up with a ranking formula that was made to be simple but provide an adequate spread for prioritization. The ranking formula, {(A+B+C+D)(E*G)}F = score, results in a maximum score of 240 and a minimum score of 2. Based on the advisory groups review, it appears the formula captures the criteria in the right relationship to one another to reflect the overall priority for receiving pumpouts.

In detail, the formula adds the criteria scores from point sources, water quality, sensitive environments, and boat facilities. The number of boats score is multiplied by the pumpout score and multiplied by the sum of the first four criteria. So, in gross terms, the environmental sensitivity scores are multiplied by a boat number score that may have been modified by the number of exiting pumpouts. Finally, the product is multiplied by the flushing score. This means that the flushing ability of a harbor carries a lot of weight in the score.

Appendix B

Priority Harbors

Rank	Harbor	Town	point sources	attainment	sensitive	boat facilities	# of boats	flushing	pumpout	Score
1	Christmas Cove	South Bristol	2	3	3	2	5	4	1	200.00
2	Orrs Cove	Harpswell	2	3	1	3	5	4	1	180.00
3	Kennebunk River	Kenebunk	1	3	1	3	5	4	1	160.00
4	Round Pond	Bristol	2	3	0	3	5	4	1	160.00
5	Bucks Harbor & Lem's Cove	Brooksville	2	3	1	3	5	3	1	135.00
6	New Meadows River	Brunswick	2	3	1	3	5	4	0.75	135.00
7	Northeast Harbor	Mount Desert	2	3	1	3	5	4	0.75	135.00
8	Back Channel	Kittery	2	3	1	2	5	3	1	120.00
9	Tenants Harbor	St George	2	3	0	3	5	3	1	120.00
10	York Harbor	York	2	1	2	3	5	3	1	120.00
11	Thomaston	Thomaston	2	3	2	3	5	3	0.75	112.50
12	Biddeford Pool	Biddeford	3	1	2	3	3	4	1	108.00
13	Cape Small Harbor	Phippsburg	3	3	2	1	3	4	1	108.00
14	Ames Cove	Islesboro	3	1	1	2	5	3	1	105.00
15	Center Harbor	Brooklin	2	2	1	2	5	3	1	105.00
16	Bass Harbor	Tremont	2	3	1	3	5	3	0.75	101.25
17	Camden Harbor	Camden	1	3	2	3	5	3	0.75	101.25
18	Benjamin River	Sedgwick	3	2	1	2	3	4	1	96.00
19	Blue Hill Harbor	Blue Hill	1	3	1	3	3	4	1	96.00
20	Inner Harbor	Winter Harbor	3	2	1	2	3	4	1	96.00
21	Somesville Harbor	Mount Desert	2	2	2	2	3	4	1	96.00
22	Merepoint Bay	Brunswick	2	1	2	3	5	3	0.75	90.00
23	Pepperal Cove	Kittery	2	2	2	3	5	2	1	90.00
24	Horseshoe Cove	Brooksville	3	1	1	2	3	4	1	84.00
25	Little River	Boothbay	2	2	2	1	3	4	1	84.00
26	The Basin	Phippsburg	3	2	2	0	3	4	1	84.00
27	Cape Porpoise Harbor	Kennebunkport	3	3	1	2	3	3	1	81.00
28	Cutler	Cutler	2	3	2	2	3	3	1	81.00
29	Mackerel Cove	Harpswell	2	3	1	3	3	3	1	81.00
30	Pemaquid Harbor	Bristol	2	2	2	2	5	2	1	80.00
31	Rockport	Rockport	2	2	2	2	5	2	1	80.00

32	Royal River	Yarmouth	1	3	1	3	5	4	0.5	80.00
33	Maddock Cove	Southport	2	1	1	3	5	3	0.75	78.75
34	Perkins Cove	Ogunquit	2	1	0	2	5	3	1	75.00
35	Potts Harbor	Harpswell	2	3	2	3	5	2	0.75	75.00
36	Snow Island	Harpswell	3	1	1	0	5	3	1	75.00
37	Eastern Harbor	Addison	2	2	1	1	3	4	1	72.00
38	Frenchboro	Frenchboro	2	1	1	2	3	4	1	72.00
39	Poorhouse Cove	South Bristol	3	1	2	0	3	4	1	72.00
40	Pulpit Harbor	North Haven	2	1	2	1	3	4	1	72.00
41	Gilkey Harbor	Islesboro	3	1	2	1	5	2	1	70.00
42	Little Cranberry Island	Cranberry Isles	2	2	1	2	5	2	1	70.00
43	Seal Harbor	Mount Desert	3	1	1	2	5	2	1	70.00
44	East Boothbay	Boothbay	2	3	1	3	5	2	0.75	67.50
45	Burnt Coat Harbor	Swan's Island	2	3	1	1	3	3	1	63.00
46	Corea	Gouldsboro	2	3	0	2	3	3	1	63.00
47	High Head Yacht Club	Harpswell	3	1	2	1	3	3	1	63.00
48	Long Island	Harpswell	3	3	1	0	3	3	1	63.00
49	McHeard Cove	Blue Hill	2	3	1	1	3	3	1	63.00
50	New Harbor	Bristol	2	3	0	2	3	3	1	63.00
51	Perry Creek	Vinalhaven	3	1	3	0	3	3	1	63.00
52	Stonington	Stonington	1	3	2	3	3	3	0.75	60.75
53	Castine	Brooksville	1	3	1	3	5	2	0.75	60.00
54	Harraseeket River	Freeport	2	1	2	3	5	3	0.5	60.00
55	Manset	Southwest Harbor	2	3	0	3	5	2	0.75	60.00
56	North Haven Thorofare	North Haven	1	1	2	2	5	2	1	60.00
57	Peaks Island	Portland	2	1	1	2	5	2	1	60.00
58	Portland Harbor	Portland	0	3	2	3	5	3	0.5	60.00
59	Sebasco Harbor	Phippsburg	2	3	2	3	3	2	1	60.00
60	Sorrento Harbor	Sorrento	1	1	1	2	3	4	1	60.00
61	Southwest Harbor	Southwest Harbor	1	3	1	3	5	2	0.75	60.00
62	Stage Island Harbor		3	1	1	0	3	4	1	60.00
63	Winter Harbor	Vinalhaven	2	1	2	0	3	4	1	60.00
64	Falmouth Foreside	Falmouth	3	3	2	3	5	2	0.5	55.00
65	Carver's Harbor	Vinalhaven	0	3	1	2	3	3	1	54.00
66	Cousins Island	Yarmouth	3	1	2	0	3	3	1	54.00

67	Cradle Cove	Islesboro	3	1	2	3	3	2	1	54.00
68	Greenlaw Cove	Deer Isle	3	2	1	0	3	3	1	54.00
69	Jewell Island	Cumberland	3	1	2	0	3	3	1	54.00
70	Love Cove	Harpswell	2	3	1	0	3	3	1	54.00
71	Northwest Harbor	Deer Isle	2	1	2	1	3	3	1	54.00
72	Port Clyde	Saint George	2	3	1	3	3	2	1	54.00
73	Robinhood Cove	Georgetown	2	3	1	0	3	3	1	54.00
74	Warren Island	Islesboro	3	1	2	0	3	3	1	54.00
75	Wills Gut	Harpswell	2	3	2	2	3	2	1	54.00
76	Riggs Cove	Georgetown	2	2	0	3	5	2	0.75	52.50
77	Bath Harbor	Bath	2	3	0	3	3	2	1	48.00
78	Sand Cove	Winter Harbor	3	2	1	2	3	2	1	48.00
79	Starboard Cove		3	2	2	1	3	2	1	48.00
80	Bar Harbor	Bar Harbor	1	2	3	3	5	2	0.5	45.00
81	Cape Harbor	Southport	2	1	1	1	3	3	1	45.00
82	Eastern Branch	Bristol	2	1	2	0	3	3	1	45.00
83	Farnham Cove	Southport	3	2	0	0	3	3	1	45.00
84	Harmon Harbor	Georgetown	2	1	1	1	3	3	1	45.00
85	Isle au Haut thorofare	Isle Au Haut	2	1	1	1	3	3	1	45.00
86	Sylvester Cove	Deer Isle	2	1	1	1	3	3	1	45.00
87	The Gut (West of Bridge)	South Bristol	2	1	0	2	3	3	1	45.00
88	The Gut-East of the Bridge	South Bristol	2	1	0	0	5	3	1	45.00
89	Diamond Cove	Portland	2	1	1	3	3	2	1	42.00
90	Friendship	Friendship	2	2	1	2	3	2	1	42.00
91	Gilpatrick Cove	Friendship	3	3	1	0	3	2	1	42.00
92	Great Chebeague Island	Cumberland	3	1	2	1	3	2	1	42.00
93	Hulls Cove	Bar Harbor	1	3	1	2	3	2	1	42.00
94	Jonesport	Jonesport	1	3	1	2	3	2	1	42.00
95	Owls Head Harbor	Owls Head	2	3	1	1	3	2	1	42.00
96	Piscataqua River	Kittery	1	2	1	3	3	2	1	42.00
97	Henry Cove	Winter Harbor	1	2	1	2	3	3	0.75	40.50
98	Linekin Bay	Boothbay	1	1	1	1	5	2	1	40.00
99	Rockland	Rockland	0	3	2	3	5	2	0.5	40.00
100	Townsend Gut	Boothbay Harbor	2	1	1	0	5	2	1	40.00

APPENDIX C. INFORMATION CONCERNING OTHER FEES PAID BY COMMERCIAL PASSENGER VESSELS

Port Information on the North East and North West Coast of North America[57]

Port	Cruise Visits in 2003	Port Facilities	Port Fees	Representative Port Fee for 900 ft vessel with 1500 passengers, weighing 77,000 tons
Eastport ME		Pier, pilot, tug, water, electricity		
Bar Harbor ME	62	Launch Landing, tour bus,	$1000 port fee $750.00 Launch Landing fee $750 Ship Dockage Fee (may be waived)	$2500
Bangor ME	9	Pier, water, electricity		
Portland ME	25	Pier, Pilot, water, security, tendering, tour bus	$1.50/foot +$4.50/person $5 shuttle bus/person Security $500/12 hours Tendering $1,500/day	$9,100 minimum
Portsmouth NH		Pier, water, electrical	$2.50/person	$3,750
Boston MA	104	Pier, pilot, water, security, baggage handling, trash removal	$2.00/foot (1,200 min) $8.50 per person	$14,550 minimum
New Bedford MA	17 (2 ships)	Pier, Piloting	None	None
Connecticut	No info	No info	No info	No info
New York/New Jersey	No info	No info	No info	No info
Philadelphia PA	24	Pier, pilot, water, security	No info	No info
St. John CAN	39	Pier, pilot, fuel, repair, waste and water	$6.24 per person +0.03/ ton	$11,670
St. John's CAN	19	Pier, piloting	$0.101 ton + $6.33 person, pilot and stevedoring extra (may qualify for rebate)	$17,272
Halifax CAN	100	Pier, piloting, water, electricity, trash removal, security	$0.101 ton + $7.13 person pilot and stevedoring extra (may qualify for rebate)	$18,472
Anchorage AK	9	Pier, piloting	$1.50-6.40/ft + $2.00 per passenger	$8,760*
Juneau AK	511	Pier, pilot, water, electricity	$0.7-2.56/ft	$2,304*
Ketchikan AK	477	Pier, tender, pilot, electricity	$1.51-4.32/ft	$3,888*

[57] All cruise ship visit and fee information was obtained from published materials available from the ports or local governments.

Haines AK	30	Pier, transportation	$0.75-3.00/ft	$2,700*
Seattle WA	98	Pier, electric, water, baggage handling	$5.50-6.00 per passenger + $1.60-15.16/foot	$22,644

* $1,750 environmental fee per trip in Alaska

APPENDIX D. INVASIVE SPECIES PLAN ITEM

Text from "State of Maine Action Plan for Managing Invasive Aquatic Species", adopted by the Land and Water Resources Council and the Interagency Task Force on Invasive Aquatic Plants and Nuisance Species (October 10, 2002).

Strategy 1A, Task 1A1:

> "**Marine Representation**
> The Land and Water Resources Council will ask the Governor to submit legislation in 2003 seeking the inclusion of marine representation on the Task Force. In addition to the DMR Commissioner, the following types of interests should be considered: U.S. Coast Guard and Navy, port authorities, coastal boaters and marinas, commercial fishing, shipping, and boat building."

APPENDIX E. REFERENCES

Coastal Pumpout Plan, 2001-2005. Maine Department of Environmental Protection.

Cruise Control -- A Report on How Cruise Ships Affect the Marine Environment (May, 2002).

Cruise Industry Waste Management Practices and Procedures-- E-01-01 (Revision 1); Attachment to ICCL Standard E-1-01 (Revision 1).

Cruise Ship White Paper, United States Environmental protection Agency (August 22, 2000).

LD 1271 (as amended by H-207), Resolve, to Study the Implementation of a Plan to Prohibit the Discharge of Certain Wastewater into Coastal Waters (Maine, First Regular Session of the 121st Legislature).

LD 1158, An Act to Protect Maine's Coastal Water (Maine, First Regular Session of the 121st Legislature).

Marine Pollution -- Progress Made to Reduce Marine Pollution by Cruise Ships, but Important Issues Remain. United States General Accounting Office, GAO/RCED-00-48. (February, 2000).

Report to the Legislature -- Regulation of Large Passenger Vessels in California (August, 2003).

Review and Comment Regarding Whole Effluent Toxicity Test Results for Five Commercial Passenger Vessels in Alaska. Alaska Department of Environmental Conservation Science Advisory Panel, Alaska Department of Environmental Conservation, July, 2002.

State of Maine -- Action Plan for Managing Invasive Aquatic Species. Adopted by the Land and Water Resources Council, and the Interagency Task Force on Invasive Aquatic Plants and Nuisance Species (October 10, 2002).

Wastewater Sampling and Analysis for Commercial Passenger Vessels. Morehouse, McGee, Loehr and Watson, Alaska Department of Environmental Conservation Science Advisory Panel, November, 2002.

These and many other materials are available through:
http://www.state.me.us/dep/blwq/topic/vessels/index.htm