Development of a Directory of Boater Pumpout Facilities and an Assessment of Pumpout Operations and Use in New York and Connecticut Marine Waters

Final Report
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Most importantly, special thanks are extended to the public and private facility operators and boaters whose participation and cooperation made this project possible.

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Project Overview

In an effort to help reduce potential pathogen loading to coastal waters from the illegal discharge of sanitary wastes from vessels, the New York and Connecticut Sea Grant Programs, with funding from the USEPA's Risk Reduction Through Pollution Prevention program, initiated a project to educate boaters and promote behavior changes with respect to the proper disposal of boat waste.

This project involved developing and distributing a directory and educational brochure listing the locations of 109 pumpout stations in New York and Connecticut marine waters and providing information on proper waste handling and disposal practices, potential problems caused by illegal discharges and existing laws and regulations regarding boat waste disposal.

Approximately 50,000 copies of the brochure were distributed to area boaters through individual marine businesses, boat shows, press releases, governmental offices, individual mailings, marine trades associations, festivals and other outlets. As part of this project, follow-up surveys of pumpout facility operators and a limited number of boaters who received the directory were conducted to provide an assessment of pumpout services in the area and to identify potential changes in boater use patterns that may have occurred as a result of the various educational and awareness programs on this topic that have been undertaken in the region.

Characterization of Available Facilities

The results of these efforts indicate the number of pumpout stations in New York and Connecticut marine waters has been steadily increasing over the past several years. In Suffolk County, on Long Island, there was a three-fold increase in the number of available facilities between 1986 and 1992. These rapid changes highlight the need for periodic updates, preferably annually, of pumpout station inventories when developing boater educational materials.

The majority of pumpout stations (approximately 70 percent) are provided by privately-owned, commercial marinas. Based on a survey of 39 public and private marinas providing pumpout services, facilities with stations had an average capacity of 164 boats which is twice as large as the average of 83 slips for the typical marina in the area. Only about 66 percent of the boats found in these facilities are likely to have the type of sanitation equipment on board that requires pumpout services.

The stations were divided almost equally between fixed and mobile units. The single most popular method of waste disposal involved the use of a holding tank and waste hauler (45 percent of the facilities). The remainder of the facilities were almost equally split between the use of individual septic systems and direct sewer hookups.

Pumpout Use

On average, the stations performed 120 pumpouts per year, but the majority of stations were used less than 50 times per season. The average number of pumpouts per boat per season was 0.74. Considering only boats greater than 25 feet (those more likely to have a holding tank), the average use was 1.1 pumpouts per boat per season with individual values ranging from 0.10 to 7.2 uses per boat. These figures indicate low use even when facilities are available.

Despite these low figures, pumpout use is increasing. The average number of pumpouts per facility per year increased from 98 to 120 between 1986 and 1993, a 22 percent increase. More importantly, the number of stations being used has grown considerably. In Suffolk County, where earlier use data were available, the total number of pumpouts performed is estimated to have more than tripled due to the increase in the number of stations. The majority of facility operators surveyed indicated that pumpout use was increasing, suggesting that awareness and education programs are having beneficial impacts on boater behavior.

Factors Affecting Use of Pumpout Stations

While use of pumpout stations is increasing, use on a per boat basis is still relatively low and the available stations are not being used to capacity. A number of factors may control pumpout use.

Fees for pumpout services ranged from free to $35 and averaged about $10. All of the government facilities and 30 percent of the private facilities surveyed provided pumpouts at no charge. For the most part, facilities charging nothing had the highest total use. The five top stations in terms of number of pumpouts performed provided the service for free. While fees charged appear to be important, the available data indicate that cost alone is not necessarily the most important factor influencing a boater's decision to use the facilities. Several stations charging $20 or more received higher use than facilities charging nothing.

Accessibility or ease of use as determined by the location of the pumpout equipment in the marina may play a role in determining whether a station will be used. Although each facility has to be examined on a site-specific with respect to the optimal location of pumpout services, overall, usage appeared to be highest at facilities located on gas docks and lowest at stations found on bulkheads even though the average pumpout fee at the gas dock was considerably higher ($13.50 versus $7.95).

Financial Considerations

The cost to install the pumpout equipment ranged between $250 (for a station installed in 1965) and $28,000 (for a public facility) and averaged $6,359. Average annual operational costs were about $1,770 but ranged up to $9,100. All of the surveyed facilities operated at a financial loss. Average annual costs (including installation and equipment depreciation) were $2,615 while

returns averaged $310 per year, giving an average net loss of $2,305. Based on the reported average use of 120 pumpouts per station per season, the typical facility operator would have to double the average fee (from about $10 to $19) just to break even. Obviously, an increase in fees of this magnitude may further discourage use by the boater.

Volume of Boat Waste and Disposal Options

The survey data suggest that the total volume of boat waste collected at all of the stations in New York and Connecticut marine waters in 1993 was on the order of 175,800 gallons per year. Approximately 56 percent of the total amount of waste collected at the surveyed facilities was temporarily stored in tanks and then transferred to sewage treatment plants by waste haulers, 23 percent was treated in individual septic systems and 21 percent was discharged to sewage treatment plants through direct sewer hookups.

The volume of the average pumpout was approximately 19 gallons. Based on the volume of waste collected at individual stations and the number of boats at these facilities, the average volume of waste per boat over 25 feet was 12 gallons of waste per year. These data suggest the volume of waste generated by the 20,365 boats greater than 25 feet long in New York's marine waters is on the order of 244,400 gallons per year. By comparison, sewage treatment plants in the Long Island Sound area alone discharge approximately 1 billion gallons of effluent per day.

The average number of boats pumped out on a high use day was 5.3 generating an average of 69 gallons of waste per day per facility in peak periods. Although this value was as high as 500 gallons at one facility, the majority of stations handled less than 50 gallons a day even during periods of high activity. These low values suggest "shock" loading of treatment systems from boat wastes should not be a problem for most facilities.

Boater Survey

A limited survey (62 responses) of boaters confirmed that holding tanks which require pumpout services are usually only found on boats greater than 25 feet long. Interestingly, the average holding tank capacity reported by the boaters was slightly over 19 gallons. This is the same as the figure for the volume of the average pumpout calculated from the data supplied by the facility operators.

Overall trends or changes in boater behavior regarding the use of pumpout stations that could be directly attributable to educational efforts were difficult to discern because of the relatively small number of boaters responding to the survey and the influence of other factors that control the need for these services.

However, half of the respondents who indicated they did not use the stations before receiving the directory said they started using the facilities after obtaining the brochure. Several respondents also indicated they stopped pumping out offshore after receiving the directory. These qualitative indicators suggest that educational programs such as the directory can be effective in changing

boater behavior. Based on responses from the survey, future educational efforts of this type could be strengthened if the directory and other educational pieces were distributed with state boater registration materials and the inventories of facilities were updated on a regular basis. In addition, boaters also identified the need for information on how to operate pumpout equipment. Boaters felt that the two most important measures for increasing use of pumpout stations were increasing the number of facilities and lowering costs, even though the present facilities do not appear to be used to capacity and are already operating at a financial loss. These measures would require higher subsidies either by facility owners or through funding programs like the Clean Vessel Act if they are to be successfully implemented. Boater education and awareness programs were also given a high priority as ways to reduce illegal vessel discharges.

Potential Boater Demand

Even if measures to increase pumpout use are instituted, actual utilization of these facilities may be limited by other factors that control boater demand for pumpout services.

Those boaters who said they regularly pumped out their holding tanks averaged only 5.9 pumpouts per season. This low figure is probably related to the fact that most boats are not used that frequently. The survey respondents indicated they used their boats an average of about 41 days and 16 nights a year but the majority were used less than 30 days and over 40 percent of the respondents indicated they spent less than five nights on board per season.

Data from a limited number of respondents suggest that boaters can be expected to use a pumpout station once for every 10 days they spend on board. This pattern of use is consistent with results of the survey of facility operators and tends to support a popular contention that many boaters avoid using the heads on their boats when other options such as shoreside facilities are available. The actual demand for pumpouts may be limited by boater behavior.

INTRODUCTION AND BACKGROUND

Pathogen contamination is a significant problem in our coastal waters. Pathogen loading can result in the closure of shellfish beds and swimming areas and adversely affect the public's use of various marine resources. As managers and planners begin to identify and implement strategies to control the major sources of pathogens (combined sewer overflows and overland runoff), more attention is being paid to other smaller, more diversified sources that may be of concern on a localized basis.

One potential source that is receiving considerable attention is the illegal discharge of sanitary wastes from marine vessels. While the contribution of boat waste to water quality degradation is usually relatively small regionally, the highly visible nature of boating activity often makes the management of vessel discharges a priority issue.

Ideally, this potential source of pollution could be controlled by having all boats with installed toilets and holding tanks use shoreside pumpout stations where vessel wastes would be collected and, subsequently, treated in land-based facilities. Although such stations have been available for several decades, there have been problems in terms of their use.

A study of the use of pumpout facilities in the New York area (Tanski 1989) indicated that existing stations were underutilized by boaters. This underutilization actually resulted in a 50 percent decline in the number of stations found in one coastal county between 1981 and 1987.

Although a variety of factors influence the use of pumpout stations, at least part of the observed trend could be attributed to the fact that boaters were not aware of where these facilities could be found. Prior to this work, there was not a comprehensive list or single source of information on the location of pumpout facilities in the New York marine waters. This problem was identified in a series of public forums on Long Island Sound sponsored by the National Audubon Society (National Audubon Society 1991). A number of speakers testified that little or no information on the locations of boat pumpout station was available and more public education in this area was needed.

The major sources of pathogen contamination to coastal waters will most likely require large-scale public works to rectify. However, the relatively small contribution of illegal boat discharges coupled with the inherent problems associated with trying to regulate a potential pollution source as mobile and diverse as boats and the limited public resources available for water quality enhancement programs make intensive or expensive management or regulatory programs aimed at this particular source difficult to justify.

Fortunately, this particular problem may be effectively addressed through educational efforts. Towards this end the New York and Connecticut Sea Grant Programs, with funding from the U.S. Environmental Protection Agency's (EPA) Risk Reduction Through Pollution Prevention program, initiated a project aimed at reducing illegal vessel discharges by developing and disseminating information on the availability of pumpout facilities to boaters in the two states. This report describes the project and presents an assessment and characterization of pumpout station operations and use in the areas based on two surveys that were undertaken as part of the project.

PURPOSE OF PROJECT

The primary purpose of this project was to help reduce pathogen loading from recreational boating in marine waters by educating boaters and promoting behavior change with respect to the proper disposal of sanitary vessel waste. This was to be accomplished by producing and distributing a comprehensive directory of pumpout facilities in the marine waters of New York and Connecticut to boaters. The materials produced included educational information on proper disposal practices, environmental problems, and existing laws and regulations regarding disposal of boat wastes.

A secondary objective of the project was to make a preliminary evaluation of the change in boater use of pumpout facilities due to this and other educational efforts by conducting limited surveys of facility operators and boaters who received the directory. In addition to discerning trends in pumpout use, the results of these surveys can be used by managers, planners, decisionmakers and facility operators to develop cost effective management strategies for reducing the potential of pathogen contamination by boaters in our marine waters.

DEVELOPMENT OF THE PUMPOUT DIRECTORY

METHODOLOGY

The project was initiated in the winter of 1991. The first step in developing the directory of facilities was to identify and locate all of the existing pumpout stations in the marine waters of New York and Connecticut. A preliminary list of facilities was developed using a number of different sources, including: the most recent editions of the three major commercially-produced boating guides for the area (Boating Almanac, Vol. 2; Northern Waterways Guide; and Embassy's Complete Boating Guide to Long Island Sound), various regional boating publications (e.g. *Long Island Power and Sail, L.I. Cruise, Soundings, Offshore, etc.*) three other listings of pumpout facilities that covered the Long Island Sound portion of the study area and a marina database maintained by the New York Sea Grant Extension Program. U.S. Army Corps of Engineers and state environmental permit records dating back to 1989 were examined to identify marina projects which usually involve the

installation of pumpout facilities as a permit condition. In addition, contacts were made with regional and state marine trades associations, individual businesses and local government officials to identify potential facilities that may have not been listed in the other sources.

These sources yielded a preliminary list of 145 potential facilities. A follow-up telephone survey of each of these facilities was conducted to confirm whether the pumpout station was operational and to collect information about operating hours, costs, approach depths, use restrictions, telephone number and the radio channel monitored.

This procedure identified some 109 sites where pumpout services were already provided or planned within the next year. Based on the results of the telephone survey, a brochure listing the facilities and their locations along with the information described above concerning operation of the individual stations was developed (Appendix A). Because the telephone survey was conducted in the off-season when many marina businesses are closed, four of the facility operators could not be reached by telephone. In these cases, the existence of the pumpout was confirmed by other marina operators in the area and a notation for the reader to call the individual facility for more information was included in the directory.

The brochure also contained educational information for the boater on potential environmental impacts associated with the illegal discharge of toilets, existing marine sanitation regulations and penalties and guidelines for the proper disposal of boat waste to promote use of pumpout stations. To encourage businesses to use the directory as an "envelope stuffer" in mailings to clients and prospective customers, the brochure was specifically designed to fit into a standard Number 10 business envelope and included a blank panel for a company's individual stamp or logo on the back cover.

DISTRIBUTION OF DIRECTORIES

Distribution of the directories began in spring of 1992 utilizing a number of different outlets. Multiple copies were supplied to each of the marinas listed in the directories. Samples of the brochures along with notices offering free supplies were mailed to over 400 commercial marinas along New York's marine coast. Working through regional marine trade associations, copies of the directories were also provided to individual marine businesses in New York and Connecticut for distribution to their customers. A number of marinas indicated they included the directories in all their mailings and passed them out to transient customers at gas docks and in ships stores as a matter of routine.

A press release announcing the availability of the directory to individual boaters was developed and sent to 263 local and national print media outlets including both boating and general publications. (Appendix B) Although it is not possible to determine how many of the publications actually carried the release, some of the articles resulting from this effort can be found in Appendix B. Copies of the directory were also sent to some 80 elected and agency officials for distribution from their offices. The brochure was also incorporated into Sea Grant

traveling displays and distributed at boat shows, environmental fairs, festivals and other public events.

Through these channels over 50,000 copies of the directory were distributed (approximately 30,000 in New York and 20,000 in Connecticut). By way of comparison, state boating statistics indicate that there are some 30,000 boats in New York and Connecticut marine waters that would be expected to have installed toilets based on their size (25 feet or longer) and may require pumpout services. Although there is no way to actually determine who all of the final recipients of the directory were because of the distribution methods, enough copies were distributed to cover all of the intended audience.

PUMPOUT STATION OPERATORS SURVEY

BACKGROUND AND METHODOLOGY

As part of this project, a limited survey of pumpout facility operators was undertaken to assess the level of use at the stations listed in the directory and to see whether use patterns have changed over the past several years in light of the various boater educational and awareness efforts that have been undertaken by different groups and organizations in the area. A mail-out survey questionnaire was developed and then reviewed by marine industry representatives (Appendix C).

In addition to obtaining information on pumpout usage, the survey was also designed to collect data on pumpout location, ownership, physical characteristics of the facility and equipment used, costs, and waste disposal methods in an effort to see which variables might be most important in terms of controlling boater use patterns. This information should be of use to managers, planners and decisionmakers responsible for developing regulations and programs to manage boat wastes. The results should also help public and private boating facility operators plan, design and construct more cost-effective stations that will encourage use.

Although the survey was originally scheduled to take place in the fall of 1992, atypically inclement weather during the summer of 1992 resulted in a decision to delay the survey for one year. According to the National Weather Service, the summer of 1992 was one of the coolest and wettest on record since 1885. Over the summer, rainfall was recorded on 17 of 20 weekends. Some industry leaders indicated that boating activity was off by more than 50 percent because of the weather. This abnormally low participation rate would tend to bias the survey data and would probably have obscured any potential trends in terms of change in boater use of the pumpout stations. As a result, the start of the survey was delayed until the fall of 1993.

Traditionally, recreational boating activity in New York and Connecticut marine waters decreases markedly after Labor Day even though some boats remain in use until later in the year. Surveys were mailed to the operators of the 109 stations listed in the directory in the last week in September. Although this precluded a second mailing due to project deadlines, this timing was necessary to collect the most complete information possible about the 1993 boating season while still allowing time for data analysis.

In an effort to increase participation by boating facility operators, the survey was done as a blind survey, that is the respondents remained anonymous. Given the sensitive nature of some of the questions, the reluctance of this audience to provide information about their individual operations, and the need for a good response to only one mailing due to time constraints, it was felt that this technique would help increase the response rate while minimizing the loss of important information.

SURVEY RESPONSE

Individual surveys for each of the 109 pumpout stations listed in the directory were sent to the facility operators. Where a single operator had more than one station (primarily in publicly-owned facilities), he or she was asked to fill out a separate form for each of the stations. A total of 49 surveys were returned. However, two of these surveys were unreadable and another two were received too late to include in the data analysis. Of the remaining 45, only 39 indicated they had an operational pumpout station. Five surveys were returned as undeliverable and five more of those surveyed indicated they did not have an operational station. The 39 positive responses represent 39 percent of the remaining 99 facilities identified.

Given that some of the remaining 99 stations may not be in operation, the actual response rate in terms of percentage of the total population may be even higher. However, since response rates of 20 to 25 percent are acceptable for mail surveys (Ross and Amaral 1992), the 39 percent response rate was considered more than adequate for providing representative information on trends in the use and operation of pumpout stations.

RESULTS AND DISCUSSION

A summary of the responses to the survey is presented in Appendix D. As with most mail surveys not every question was answered on each returned form. Where necessary and pertinent, the number of responses or total size of a sample used to calculate a figure is given in parenthesis immediately following the figure and preceded by "n=" (e.g. average of 32 (n=17), where 17 is the size of the sample). This format is used throughout the report.

Number of Facilities

As mentioned previously, of the 45 respondents of the survey, five indicated they did not have an operating pumpout station. Two of these five indicated their stations were being installed, but not yet operational, at the time of the survey. An additional five surveys were returned as

undeliverable. Followup calls to these facilities indicated they had gone out of business so it must be assumed pumpout stations are not available at these sites. Conversely, since the survey was published and distributed, 4 boating facilities in the study area indicated they had installed new pumpout stations. These responses reflect the rapidly changing nature of the marina industry, in general, and the fluctuating availability of pumpout services. For example, in 1987 there were only 13 operating pumpout stations in Suffolk County, New York. Research for this directory in 1992 revealed that 48 stations were in operation and another 11 were planned for a total of 59. This represents a 450 percent increase over a five year period.

Although the purpose of this survey was not to verify operational facilities, based on the responses received, it is probable that the status of other stations may have changed in the year since the directory was developed. These rapid changes highlight the need for periodic updates, preferably on an annual basis, of pumpout facility inventories to maintain accuracy.

General Characteristics of Facilities

Location: Of the 39 pumpout stations responding to the survey, the majority (28) were in New York. Figure 1 shows the distribution of surveyed facilities by location and ownership. The highest concentration of respondents was from the Long Island Sound area (23 stations) followed by the south shore bays of Long Island (9 stations) and the Peconic/Gardiner Bay area (7 stations) on the east end of Long Island. This distribution follows the distribution of facilities identified in the directory which listed 60 facilities in the Long Island Sound region, 29 along the south shore of Long Island, and 19 in the Peconic Gardiner Bay area indicating the sample provides a good regional representation of the population.

Ownership: The majority of surveyed stations (72 percent) were in privately-owned, commercially-operated boating facilities while the remainder were found in facilities owned or operated by various government entities. Of the 109 identified facilities, 68 percent were in private commercial enterprises, again indicating the survey sample is representative of the population as a whole. Government owned stations comprised 30 and 44 percent of the respondents from Long Island Sound and the south shore of Long Island, respectively. No government stations responded from the Peconics area.

Marina Size: The size distribution of the surveyed facilities in terms of total number of boats is shown in Figure 2. The average size was 164 (n=31) total boats with capacities ranging 12 to 850 boats at the individual marinas. This is considerably larger than the average slip size of 83 estimated for Long Island marinas (Brown 1984). Most of the surveyed facilities had more than 100 boats indicating that the facilities with stations are generally significantly larger than the typical marina in the area.

The majority of boats berthed in these facilities are over 25 feet. On average, over 66 percent of the boats found in the surveyed marinas were larger than 25 feet. The actual number at the individual facilities ranged from 8 to 700. Boat size is significant because a number of studies (EPA 1985; Ross and Amaral 1992; Tanski 1989) indicate that boats less than 25 feet generally

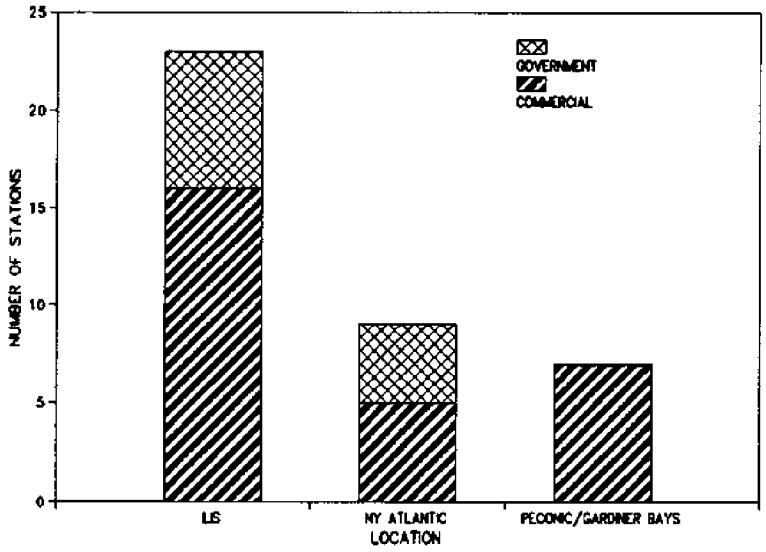

Figure 1. ***Distribution of surveyed facilities by location and ownership. LIS = Long Island Sound. NY Atlantic = South Shore of Long Island.***

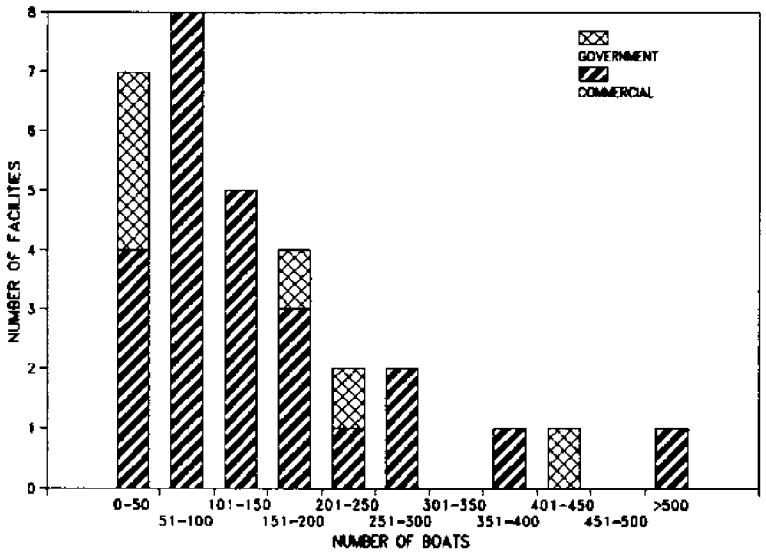

Figure 2. ***Size distribution of marinas surveyed based on total number of boats.***

do not have installed toilets or the type of equipment that requires the use of a pumpout station. Conversely, the majority of boats greater than 25 feet do have installed toilets and often use a Type III MSD (marine sanitation device) holding tank that requires pumping out.

Pumpout Equipment: The oldest of the pumpout facilities surveyed dates back to 1965 when two stations were installed (Figure 3). Although new stations have appeared periodically since 1965, as can be seen from Figure 3., the majority of surveyed stations built between 1989 and 1992. Twenty-one were installed during this period. This trend is probably the result of a combination of increased awareness on the facility operators part and the recent tendency of many agencies to require a pumpout station as a condition for a permit for a new or expanding marina. Regardless, the available data do indicate that most of the surveyed stations are relatively new.

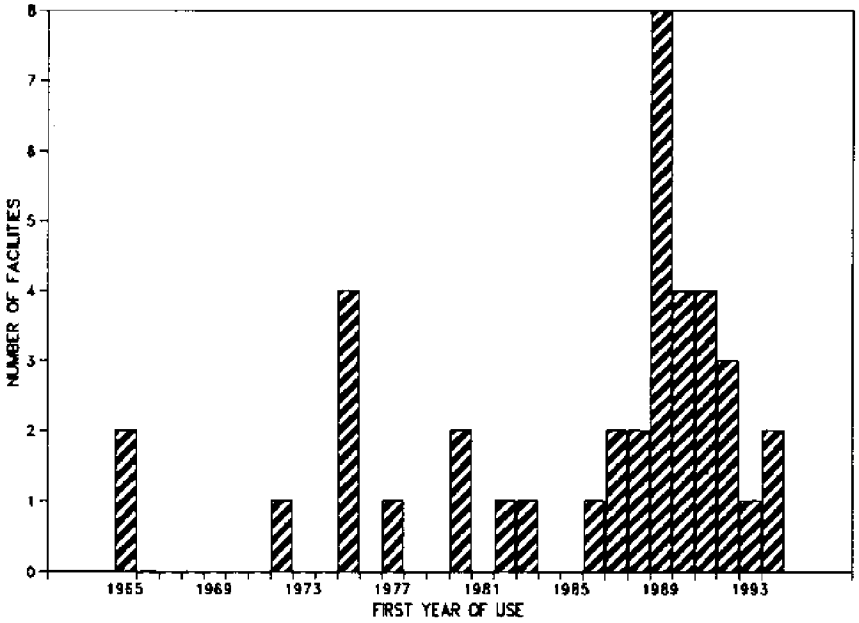

Figure 3. ***First full year of use for the surveyed facilities. (The two responses for 1994 are for facilities that were installed after the boating season in 1993.)***

In terms of the type of pumpout stations used, fixed stations (where the facility is permanently stationed in one location and the boats must go to it for service) were slightly more prevalent than mobile stations (where facility is portable and can be moved to the boat). There were 22 fixed stations compared to 19 mobile stations. (Note: These figures include two stations that were in the process of being installed at the time of the survey but were not yet operational, giving a total of 41.) One of the mobile stations was on a boat. These figures are similar to

those of Ross and Amaral (1991) who surveyed 76 facilities in New England and found that 69 percent of the pumpout stations were fixed and 31 percent were mobile.

Most of the stations (73 percent) were commercially manufactured models while 27 percent were homemade. Of the 11 homemade units, 8 (73 percent) were mobile stations. The location of the pumpout station within the marinas was fairly well distributed (Figure 4). In response to the question regarding the location of the pumpout, 10 facilities responded it was on the gas dock, another 11 were found on a dock other than the gas dock, 11 said it was on a bulkhead, 7 indicated they had a mobile station and one was on a boat. It should be noted that a number of operators with mobile stations indicated that while the station could be moved, it is primarily used at a single location.

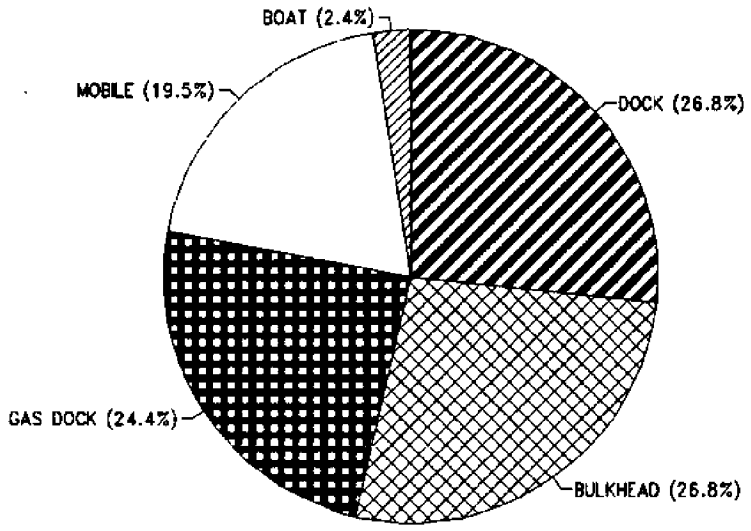

Figure 4. ***Distribution of surveyed stations by location within the marina. Total number of stations = 40.***

Waste Disposal: The single most popular method of waste disposal was the use of a storage tank and waste hauler (Figure 5). Eighteen marinas used this method. Ten facilities disposed of the boat sewage in their individual septic or cesspool system and 12 discharged to municipal sewage treatment plants.

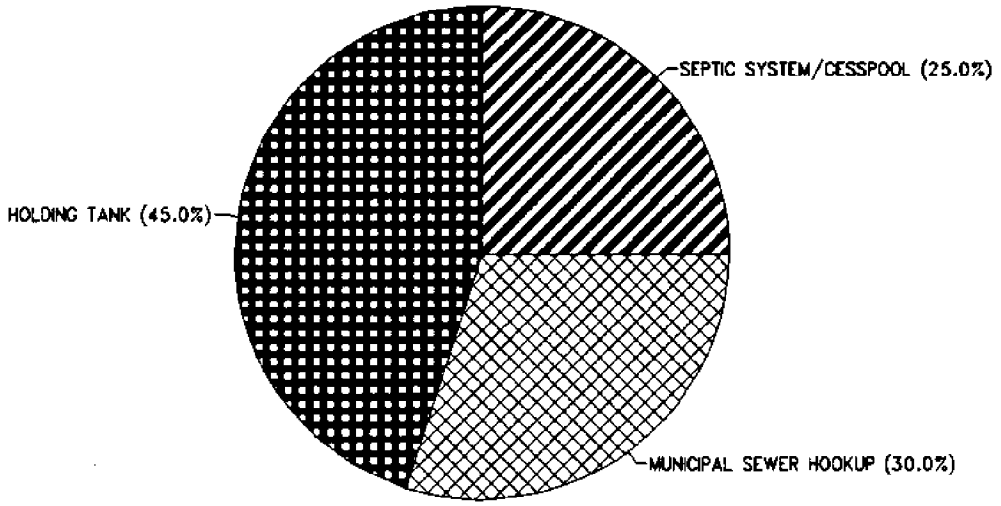

Figure 5. ***Methods of waste disposal employed at surveyed facilities. Total sample size = 40.***

Twenty-five respondents also indicated that they used a tank for the storage of boat waste. These 25 included 4 facilities that used individual septic systems and 3 facilities that discharged to sewage treatment plants. This suggests that no matter what treatment option is used some temporary storage capacity for collected waste may be required depending on the specific circumstances. Eighty percent of the tanks were above ground. The volume of the tanks ranged from 55 to 4000 gallons with an average of 566 gallons.

Equipment and Operational Costs: The reported total cost to purchase and install a pumpout system (including labor, tanks, piping, etc.) ranged between $250 and $28,000 and averaged $6,359 (n=33). The lower figure in the range is the cost given for a homemade unit that was constructed in 1965 and is probably not really representative of the true costs of building a facility today. Again, the average figure of $6,359 is similar to the installation cost of $5,323 calculated by Ross and Amaral (1992) in their study of New England facilities indicating the economic data obtained in this survey are representative of real trends.

In general, the installation costs are considerably higher for fixed facilities than they are for mobile units. Installation costs ranged from $1,300 to $28,000 with an average of $9,675 (n=16)

for fixed pumpout stations while mobile stations ranged between $250 and $8000 dollars with an average cost of $3,238 (n=17).

The reported average annual costs associated with running a pumpout facility ranged between $100 and $9,100 dollars with an average of $1776 (n=24). Figure 6 shows the breakdown of these annual costs. Labor costs represented the highest single expense accounting for 47 percent of the total cost followed by waste disposal and general maintenance costs which were roughly equivalent.

While fixed facilities had higher installation costs, they exhibited lower annual costs than the mobile units. Annual costs ranged between $100 and $3,777 with an average of $1,139 (n=6). Mobile units reported annual operating and maintenance costs from $150 to $9,100 with an average of $2,480 (n=9). The $9,100 figure was from the largest commercial marina surveyed (800 boats) which had the highest reported pumpout use for a commercial facility (800 pumpouts per season). Of the $9,100 annual costs reported, $8,000 was for labor. However, even if this facility was not included in the calculation in the average annual cost would be $1,643 which is higher than the fixed station average. This difference is due to the increased labor costs associated with operating a mobile station which often has to be moved to the boat.

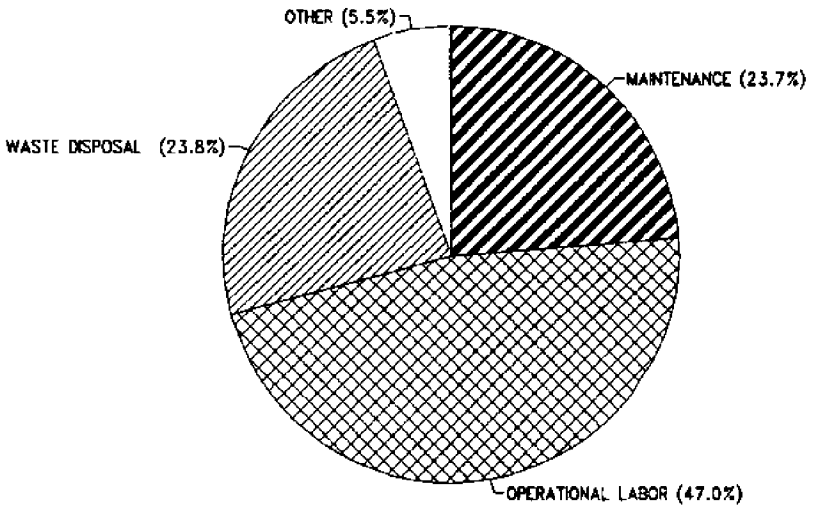

Figure 6. ***Breakdown of annual costs associated with running a pumpout facility. Total average annual cost from surveyed facilities = $1776.***

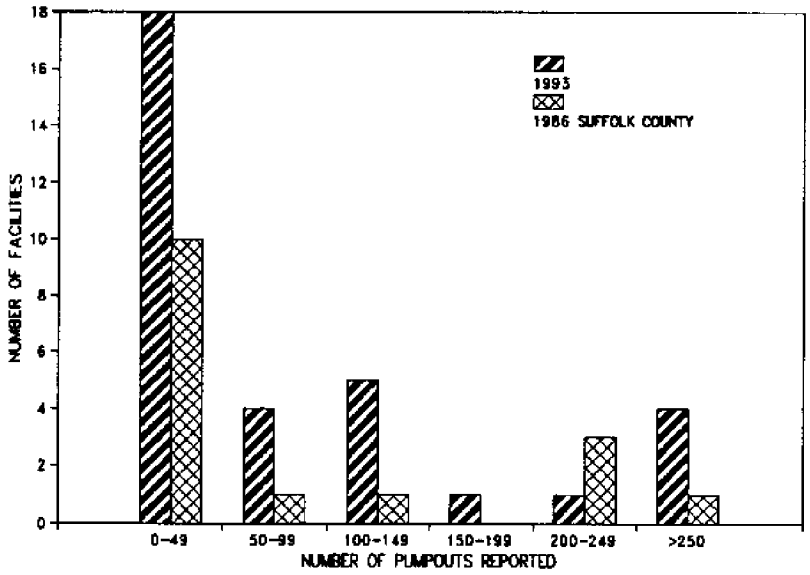

Figure 7. ***Level of use in terms of total number of pumpouts performed per season. Suffolk County data were from Tanski (1989) and represent only 16 facilities.***

Pumpout Fees: The charge for a pumpout at the facilities surveyed varied from free to $35. Overall, transients paid slightly more than regular customers, averaging just over $11 per pumpout compared to just over $9 for the regular customer (n=39). All of the government-run stations provided the pumpout services at no charge.

Boater Use of Pumpout Facilities

Number of Pumpouts: Thirty-three of the surveyed stations provided estimates of the total number of pumpouts they performed during the 1993 boating season. They reported a total of 3868 pumpouts. While the average number of pumpouts per station was 120 per season, the use at individual stations varied widely as can be seen in Figure 7. The actual number of pumpouts reported ranged between 0 and 1000, however, the distribution among facilities was skewed toward the lower end of this range. The majority of the stations were used less than 50 times. However, four of the stations did experience relatively high use, performing over 250 pumpouts each during 1993.

Obviously, the number and size of boats in a marina would influence the total amount of use a particular station received. As mentioned previously, only boats 25 feet or greater in length tend to have installed toilets and holding tanks which require pumpout services. To minimize the influence of the size of the marina and get a clearer picture of use patterns of the individual

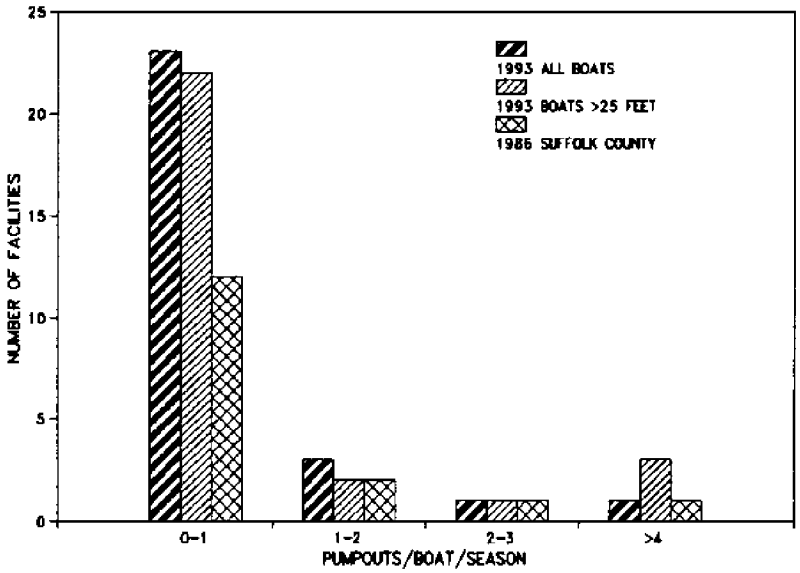

Figure 8. ***Level of use in terms of pumpouts per boat per season. Suffolk County data are from Tanski (1989).***

boaters, the use data were normalized by calculating the number of pumpouts per boat per season and the number of pumpouts per boat over 25 feet per season for the individual facilities supplying the necessary information.

The average number of pumpouts per boat per season was 0.74 (n=28) but varied between 0.03 and 5.40. Again, use was skewed toward the lower end of this range (Figure 8). Eighty-two percent (23) of the facilities supplying the necessary data had average uses of less than one pumpout per boat per season. A similar trend was observed when the calculation was done for the number of boats larger than 25 feet. The average number of pumpouts per boat greater than 25 feet per season was 1.1 and values ranged from a low of 0.10 to a high of 7.20 pumpouts per season.

Although neither relationship was very strong, statistically there appeared to be a slightly higher correlation between the total number of pumpouts and the number of boats over 25 feet at the facilities (correlation coefficient (R^2) based on a simple linear regression = 0.62) than the number of pumpouts and the total number of boats (R^2=0.59) (Figures 9 and 10). If the information is available, estimates or projections of pumpout use should be based on the number of boats greater than 25 feet rather than the total number of boats in a facility.

Change in Use: One objective of this survey was to see if the levels of boater use of the pumpout facilities had changed in light of the increased public awareness and educational efforts that have been undertaken in the area. These efforts include the directory developed as part of this project, public education programs conducted as part of the EPA's Long Island Sound Study

(LISS), and programs developed by various environmental organizations (e.g. SoundWatch, a local environmental group, developed a similar directory for the Long Island Sound portion of the area covered in this project). Although it is not possible to establish an absolute cause-and-effect relationship between these efforts and pumpout use; increasing use would indicate these efforts were beneficial.

The only other data on pumpout utilization for the area are from a study by Tanski (1989) that looked at the use of the 16 facilities located in Suffolk County in 1986. Data on the level of use in terms of the total number of pumpouts per station per season are plotted with the data from the current project in Figure 7 for comparison. Although both datasets reveal that the majority of stations received less than 50 uses annually, the average number of pumpouts per station per year in 1986 was only 98 compared to the average of 120 pumpouts in 1993, an increase of over 20 percent.

However, it must also be recognized that the number of stations has increased dramatically since

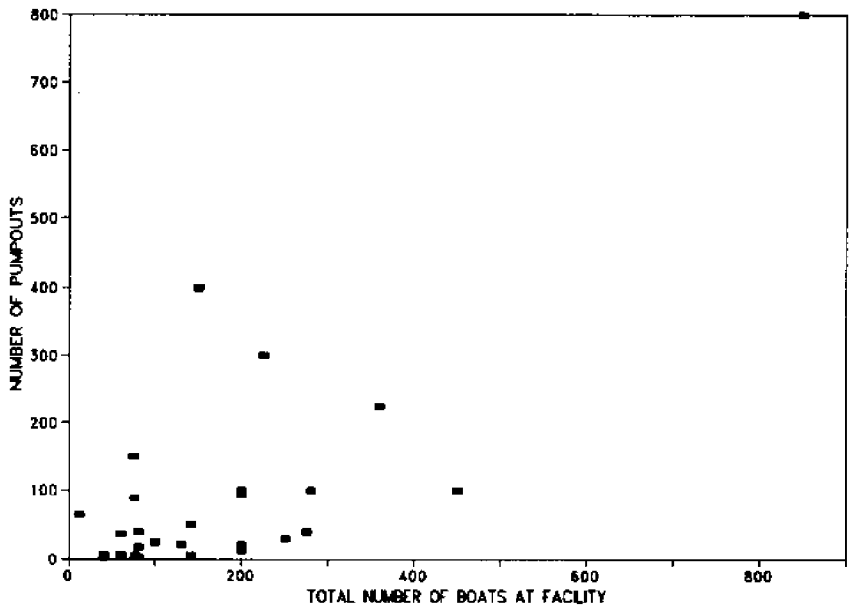

Figure 9. ***Relationship between number of pumpouts and the total number of boats in a facility*** ***(R^2=0.59).***

1986. In developing the directory, 48 existing and 11 planned facilities were identified in Suffolk County in 1992 compared to the 16 in 1986. Assuming the calculated average number of pumpouts per station is valid for the 48 operational facilities, this would give an estimated 5,760 pumpouts in 1993 countywide compared to a total of 1,562 in 1986. This represents a 370% increase in use.

The earlier study found that the average number of pumpouts per boat per season was 0.70 which is slightly lower than the average of 0.74 found in 1993. On the surface, this similarity seems

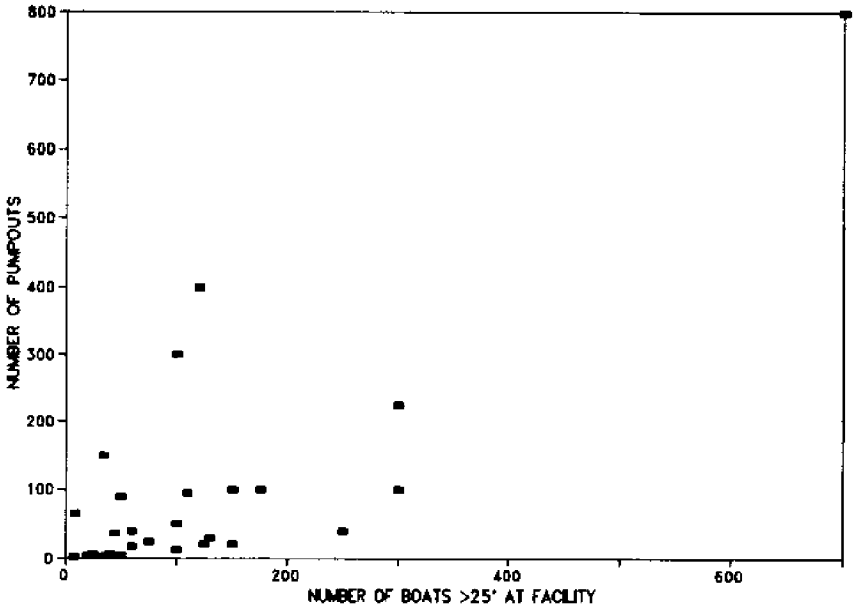

Figure 10. ***Relationship between number of pumpouts and number of boats over 25 feet (R^2=0.62).***

to conflict with the observed trend toward increasing use indicated by the data described above. The total number of pumpouts could increase while use on a per boat basis remained the same if the marinas responding in this survey were significantly larger than those sampled in the earlier study. However, this was not the case. The average number of boats per marina in 1986 was 178 compared to 164 in this study.

A more likely cause for this trend could be changes in the use of the boats themselves. A number of marina operators noted that customers have not been using their boats as much as in previous years due to the downturn in the economy. Obviously, decreased boat use would lessen the need for pumpout services. As Figure 8 shows, the trend in the level of use on a per boat basis was essentially the same for both studies. The majority of stations performed less than 1 pumpout per boat per season in both years.

The trend toward increasing use of pumpout stations suggested by the quantitative data was substantiated by the facility operators themselves. When asked to compare the use of their stations in 1993 with previous years, the majority of respondents (53 percent) indicated that pumpout use had increased in 1993 (Figure 11). The data collected during this survey indicate that pumpout use is indeed increasing. Although not quantifiable, a portion of this increase may be attributable to boater education efforts such as the directory produced as part of this project.

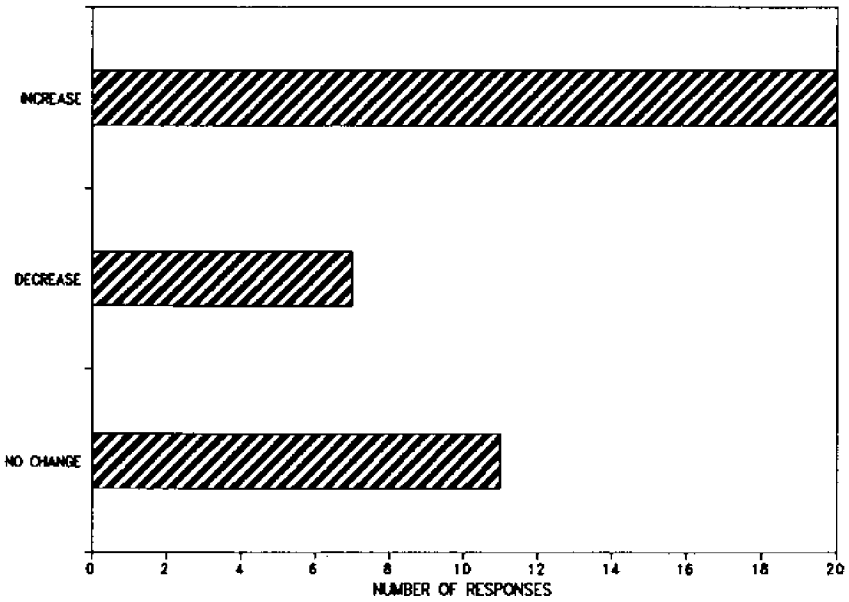

Figure 11. ***Facility operators perception of change in use of pumpout stations in 1993 as compared to previous years.***

Factors Affecting Pumpout Use

Although boater use of the pumpout facilities appears to be increasing, the relatively low use on a per boat basis and the wide range in the level of use at the individual stations indicates that notall the stations are being used to capacity. A number of factors may affect pumpout use. Two factors often thought to influence the boater's willingness to use pumpout stations are the fees charged and the accessibility of the station which is often related to its physical location in the marina (JRB Associates 1981). The data collected here were used to examine the relationship between these two factors and the level of use observed at the surveyed facilities.

Cost: As described previously, the fees charged for a pumpout ranged from free to $35 and averaged $9.38 for regular customers and $11.19 for transients. In general, the facilities charging no fee for pumpout services received the highest use.

For example, The government-run facilities, all of which charged nothing, averaged 209 (n=11) uses per season. In comparison, the commercial facilities, which charged an average of $13.39 per pumpout for their regular customers and $15.98 for transients, averaged 92 pumpouts per season (n=28).

It is also interesting to note that facility operators who felt that pumpout use was increasing (Figure 11) charged an average of $7.25 per pumpout compared to the average of $10.50 for those who thought use had not changed and $15.71 for those who said use was decreasing.

The relationship between cost and level of use in terms of the total number of pumpouts performed for all stations is shown in Figure 12. As can be seen, the five stations receiving the highest total use charged nothing. This trend suggests that fees can be an important factor in determining use. However, the scatter in the data and the fact that there was no statistically significant correlation between cost and number of uses (R^2= 0.22; n=25) clearly indicates that cost alone is not the only factor controlling use. Several of the stations charging nothing received less use than facilities charging $20 or more.

To minimize the influence of marina size and provide a better picture of individual boat use patterns, the relationship between the number of pumpouts per boat greater than 25 feet per season and fees charged were examined (Figure 13). These data show there are considerable discrepancies in the relationship between cost and use. In fact, the highest use on a per boat basis was at one of the most expensive stations.

While providing pumpout services for free seems to encourage use, the available data indicate that cost alone is not always the most important factor influencing the individual boater's decision to use the facilities.

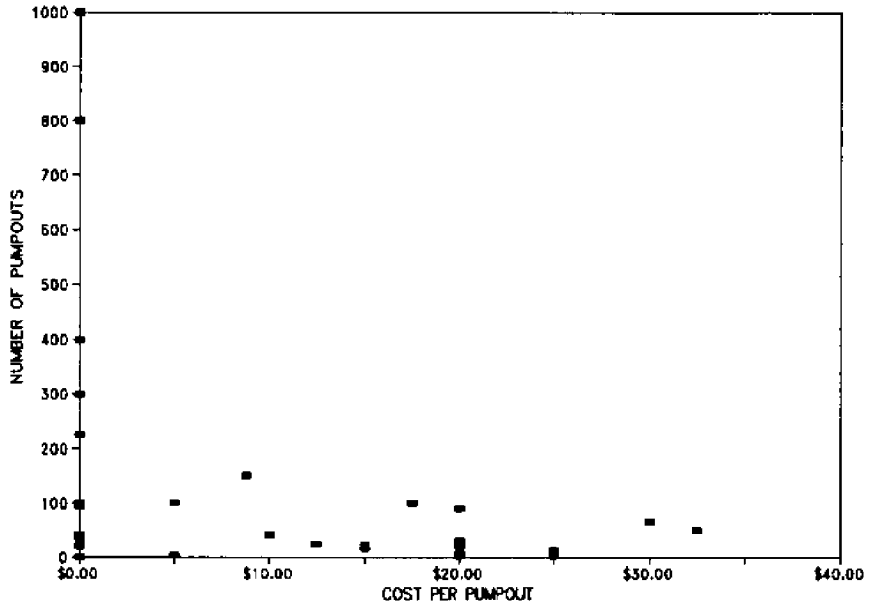

Figure 12. ***Relationship between cost and use at the surveyed facilities.***

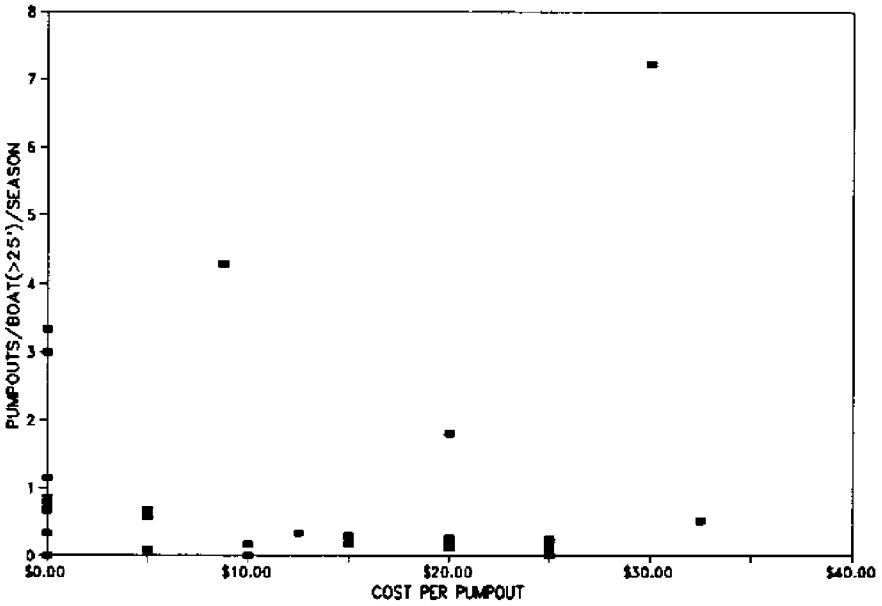

Figure 13. ***Relationship between cost and use for boats over 25 feet in length.***

Location of Facilities: Placement of the pumpout equipment within the facility has been cited as one of the key factors in determining use (Ross and Amaral 1992). The location of the station in the marina can affect its accessibility and, thus, the willingness of the boater to use the facility. The level of use in terms of number of pumpouts per boat over 25 feet per season as a function of station location for the surveyed facilities is shown in Figure 14. Facilities on the gas dock had the highest level of use with an average of 1.8 pumpouts per boat (n=8) followed by mobile stations with an average of 1.1 (n=6). The lowest average use of 0.4 pumpouts per boat was recorded at stations located on the bulkhead (n=6).

This pattern of use is logical considering the gas dock is usually one of the most accessible points in most marinas and is frequented by a large number of boats which would tend to encourage the utilization of equipment located in this area. Mobile stations provide the convenience of going to the boat rather than having to take the boat to the facility lessening demands on the boater. On the other hand, getting to a station located on a bulkhead could involve navigating through a crowded marina. In addition, shallow depths commonly found near the bulkhead could limit the access of some boats. If the location adversely affects the convenience or ease of use for the boater, the level of use would decrease.

Interestingly, while the average fees for the gas dock and mobile stations ($13.50 and $13.04, respectively) were significantly higher than the charge for stations on bulkheads ($7.95), the more expensive gas dock and mobile stations were used three to four times as much. Again, this illustrates the fact that cost alone is not always the most important factor in determining use.

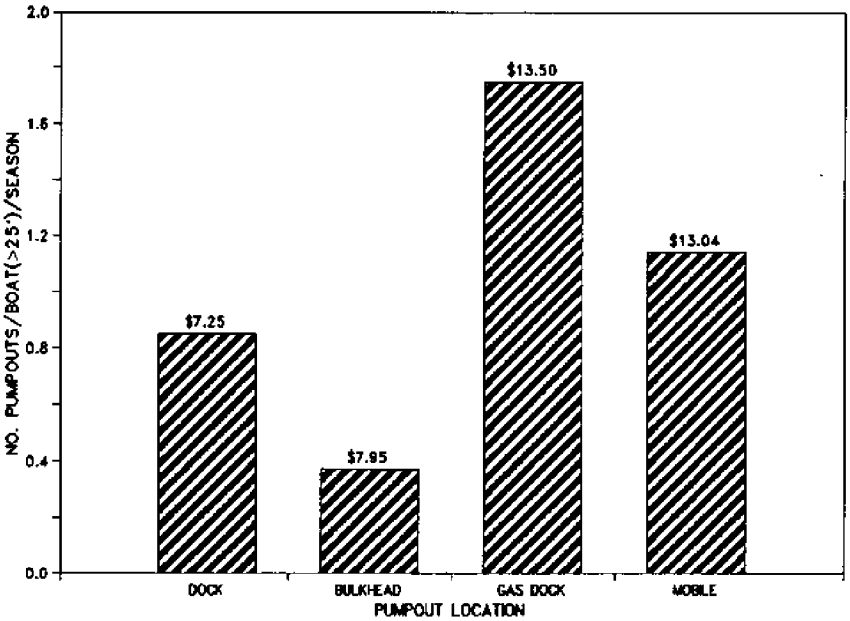

Figure 14. ***Use as a function of pumpout location in the marina. Dollar figures indicate the average fee charged for each group.***

While the relative ease of use in terms of location depends on the individual facility and should be examined on a site-specific basis, the available data indicate that, in general, stations on gas docks were used more frequently than those located on bulkheads.

Obviously, the level of use depends on a number of other factors. The type of boating activity taking place in a harbor (Ross and Amaral 1992) is extremely important. Destination harbors, which attract a large number of transients probably require a higher level of service than so called homeports where boats are essentially stored or parked between uses.

Utilization of pumpout facilities also depends level of boating activity which in turn determines demand. A number of studies have shown that boat occupancy rates in most marinas are usually relatively low ranging from less than 10 percent to a high of fifty percent during extremely high use periods (Eldredge 1989; Kator, et al. 1982). Obviously, if boats aren't being used they don't require pumpout services. In some cases, even when boats are occupied pumpout services may not be required. A study of Washington boaters (Browne 1989) found that 70 percent of the boaters with installed toilets and holding tanks use on-shore restroom facilities most of the time. These factors may be reflected in the fact that average maximum number of vessels pumped in any one day was 7.9 and the average number on a high use day was 5.3 boats.

Financial Considerations

A number of facility operators have indicated that operating a pumpout station is not cost-effective for a commercial operation because the revenues generated are so low compared

to the cost of installing and operating the equipment. The data collected during this survey tends to substantiate this contention.

For the fifteen of the stations supplying complete financial information, real annual cost for providing pumpout services, assuming a ten-year depreciation on equipment, averaged $2,615 ($721 in depreciation plus $1,894 in annual operation, maintenance and disposal costs). The average annual return on pumpout operations for these facilities was $310 giving an average net annual loss of $2,305. Not one facility reported a profit or even covered its costs. Ross and Amaral (1992) reported similar losses for New England pumpouts.

Clearly, pumpout services are being subsidized by the facility operators. Based on the present level of use (120 pumpouts per season) these facilities would have to charge an average of over $19 per pumpout just to break even (presently average fees are $9 to $12 for customers and transients, respectively). Such increases would further discourage use. While larger, more profitable commercial operations may be able to absorb the losses, smaller marginal firms may have more trouble, especially considering current economic conditions. Programs such as the federal Clean Vessel Act which provide matching grants to commercial facilities may be needed to help defray these losses if the number of stations is to be increased.

Boat Waste Volumes and Disposal

Problems associated with the handling and final disposal of collected boat sewage have been cited as a major factor limiting the installation and use of pumpout facilities (Rogers and Abbas 1982; Tanski 1989; Ross and Amaral 1992). Often, sewage treatment plant operators are hesitant to accept boat waste due to a concern that certain chemicals and additives used to control odor in the holding tanks may adversely affect sewage treatment plant operations. In some cases, there are also concerns regarding potential impacts of this material on individual septic or cesspool systems. Although studies have indicated that boat wastes would not significantly hinder the operation of treatment plants or individual systems (Novak, et al. 1990; Pearson, et al. 1980) due to the small volumes generated and the amount of dilution that commonly occurs in the system, problems with the disposal still persist. In fact, two of the five facility operators responding to this survey who said they had not yet installed stations indicated the delay was the result of local authorities refusing to let them tie into municipal sewer lines. In many cases this hesitancy is largely due to a lack of quantitative information on the amount of waste that can be expected and over what time period it will be delivered.

Volume of Sewage Collected: The thirty-one stations reporting boat waste volume figures collected a total of 51,625 gallons of sewage per season with an average of 1,613 gallons per station. The method of disposal based on volume of waste is shown in Figure 15. Over 56 percent of the boat waste collected was stored in tanks and disposed of by licensed waste haulers at sewage treatment plants. The remaining waste was disposed of in the facility's individual septic system (23.1 percent or 11,900 gallons at 9 facilities) or discharged to the local treatment plant through a direct sewer hookup (20.7 percent or 10,670 gallons at 7 stations). Interestingly, the station with the highest volume (8,000 gallons) disposed of the waste in their own septic

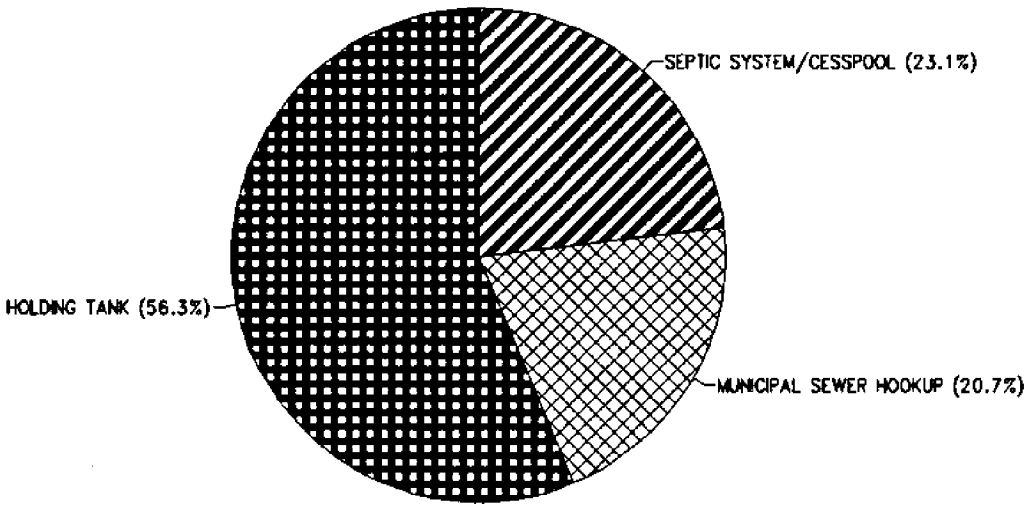

Figure 15. ***Distribution of disposal methods based on volume of waste collected. Total volume from surveyed facilities was 51,625 gallons (n=32).***

system with no apparent problems. Assuming these averages are valid for the 109 existing and planned stations identified in the directory, the data suggest that the total volume of boat waste collected in New York and Connecticut marine waters would be on the order of 175,800 gallons per year with about 99,000 gallons going to pretreatment plants via waste haulers, 40,600 gallons being disposed of in individual septic systems and 36,400 gallons going to sewage treatment plants through direct hookups. Obviously, even with these somewhat inflated figures (not all the stations were operational), the total volume of boat sewage is almost infinitesimal compared with the volume from other sources. According to the Long Island Sound Study, sewage treatment plants discharge some 1 billion gallons of effluent a day into the Sound alone. These figures suggest that boat sewage is a minor component of the waste stream and would be highly diluted if treated in the plants.

As with pumpout use, the actual volume of waste collected at the individual stations varied considerably (Figure 16). The most heavily used station reported a total of 8,000 gallons per season but the majority of stations (52 percent) collected less than 500 gallons a year. This

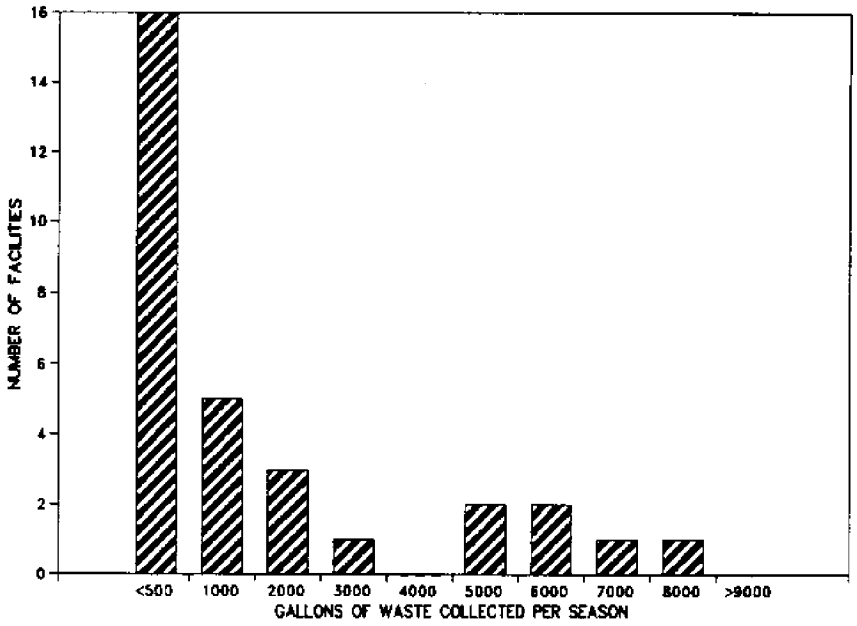

Figure 16. ***Distribution of use based on total volume of boat waste collected per season.***

variability indicates the planning and design of waste disposal systems should be done on a site-specific basis to account for potential differences in use.

Guidelines for Estimating Sewage Volumes: While by no means comprehensive, the data collected in this survey do provide some quantitative insights into use patterns by individual boaters. This information may be particularly useful in designing and sizing future pumpout stations.

Based on the total number of pumpouts reported and the total volume of waste collected at the 27 stations providing this information, the volume of the average pumpout was calculated to be 19 gallons. This figure agrees fairly well with the 22 gallons per pumpout estimated by Ross and Amaral (1992) for New England facilities.

Dividing the volume of waste collected per season by the number of boats over 25 feet for each of the individual facilities suggests that boats in this size class generated an average of about 12 gallons of sewage per season (n=26). Although this figure ranged from 0 to 60 gallons per boat depending on the facility, the majority of respondents (65 percent) reported volumes of less than 10 gallons per boat greater than 25 feet (Figure 17). When all boats at the individual facility were considered the average volume was 8 gallons per boat per season.

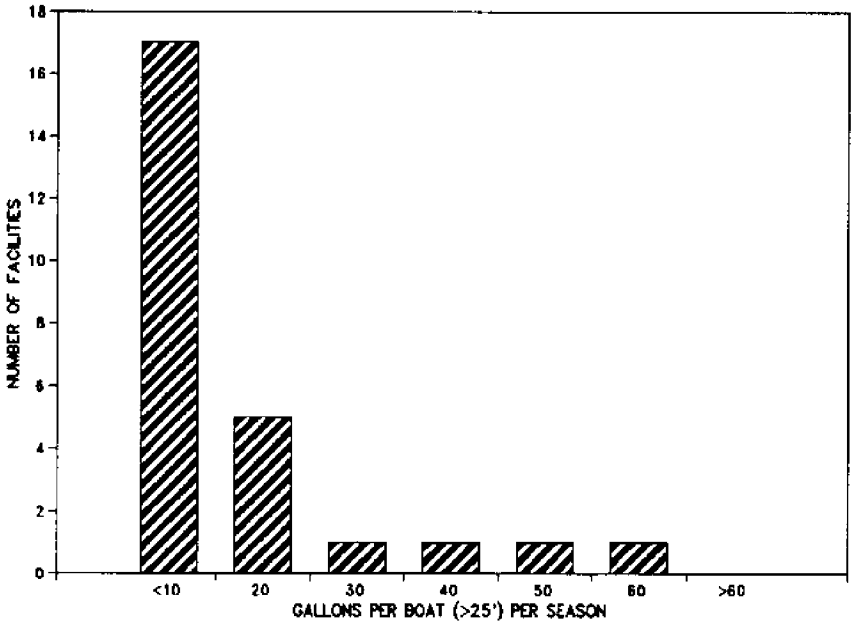

Figure 17. ***Volume of sewage collected on a per boat basis for vessels over 25 feet.***

Extrapolating these figures to the total population of boats in the New York marine district suggests that the volume of sewage expected from all of the recreational vessels over 25 feet (total= 20,365) would be on the order of 244,400 gallons per year (20,365 boats times 12 gallons per boat) for the marine coastal area.

Because boating activity is usually concentrated during certain time periods (weekends and holidays during the summer), the data were also used to get an idea of the volume of waste that could be generated during peak boating periods. This information is useful because it provides estimates of potential "shock" loads that might be delivered to the various sewage treatments systems over a short period of time.

The number of vessels pumped out on a high use day ranged between 0 and 50 with an average of 5.3 boats. Multiplying the average volume per pumpout times the number of boats pumped out on a high use day for the individual facilities supplying the necessary information (n=27) revealed that the quantity of boat sewage collected during peak use ranged between 0 and 500 gallons per day but averaged only 69 gallons. As can be seen in Figure 18, most stations collected less than 50 gallons per day during high use periods and only 4 collected more than 200 gallons. Thus, even during normal high use days, the total volume of sewage collected is usually relatively small.

As a "worst case scenario" the same calculation was done using the estimates given for the maximum number of boats ever pumped out in one day. This value ranged between 0 and 700 gallons but averaged only 112 gallons per day. The available data indicate that, even at

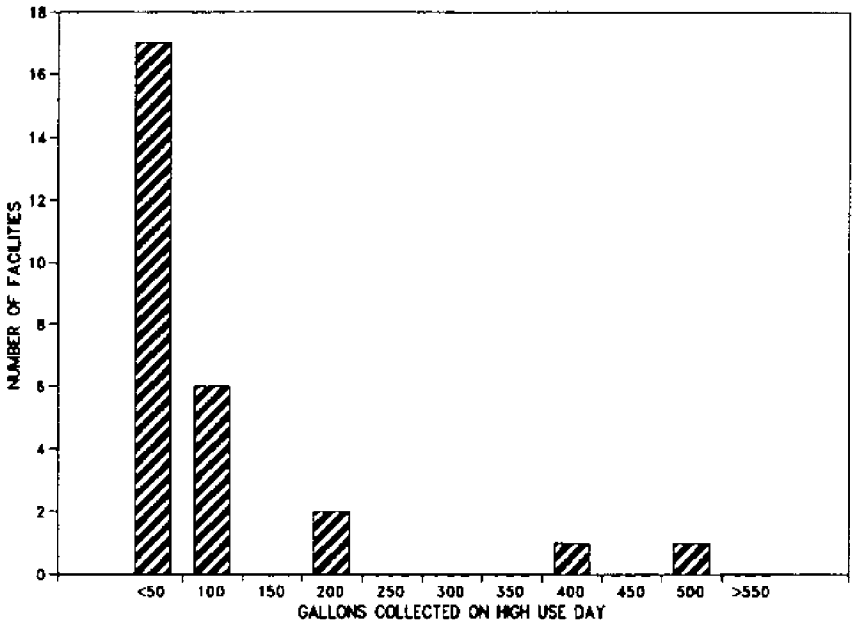

Figure 18. ***Volume of boat waste collected on a high use day at the individual facilities.***

maximum usage, the potential volumes of boat waste that would be introduced into treatment systems is very small and would probably be greatly diluted by other inputs.

BOATER SURVEY

BACKGROUND AND METHODOLOGY

As part of this project, a limited number of people receiving the directory were surveyed to assess changes in behavior regarding the use of pumpout facilities, identify measures that might encourage use from a boater's perspective and solicit ideas that could be used to improve the directory and other future educational efforts. The survey form (Appendix E) was also designed to gather information on the types of boats and equipment used and occupancy rates.

In the fall of 1993, blind surveys were sent to 156 individuals who requested and received the pumpout directory. Although the timing prevented a second mailing due to project deadlines, it did allow boaters to provide information from the full 1993 boating season. Sixty-two usable surveys were returned for a response rate of almost 40 percent. While limited in scope, the resulting data provide interesting insights regarding boat and pumpout use. They also provide some preliminary guidelines for estimating pumpout demand.

RESULTS AND DISCUSSION

Equipment Used

Boat Size: A summary of the responses to the survey is presented in Appendix F. The majority of those responding to the survey were boaters. Fifty-eight or 94 percent said they owned a boat. (One respondent indicated he regularly used a boat but did not own it). For the most part, the survey sample represented owners of larger boats (Figure 19). Eighty-one percent had boats over twenty-five feet. According to 1990 New York state boating statistics, less than 15 percent of the boats registered in New York's marine district are larger than 25 feet (Figure 20) (Kuehn 1991). As discussed previously, this is the size boat that would be expected to have an installed toilet and sanitation device. Thus, the respondents to this survey are more likely to require pumpout services than the normal boating population.

Type of Marine Sanitation Devices: Federal regulations require boats equipped with an installed toilet to have one of three types of MSD attached to the toilet to handle the waste. Type I and II MSDs are flow-through systems that treat and then discharge the waste. They usually do not require the services of a pumpout station. Type III systems employ holding tanks to store the waste until it can be transferred to an appropriate treatment facility or legally discharged beyond the 3-mile limit. Portable toilets, common in smaller boats, are not covered under federal regulations.

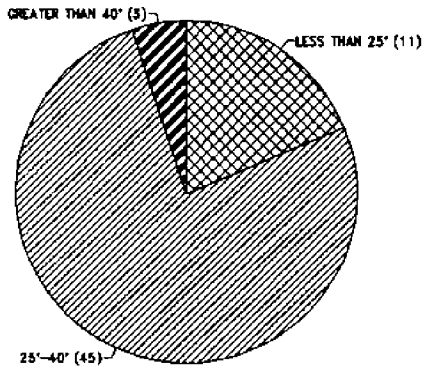

Figure 19. ***Distribution of survey respondents by boat size. Numbers in parenthesis indicate number of respondents.***

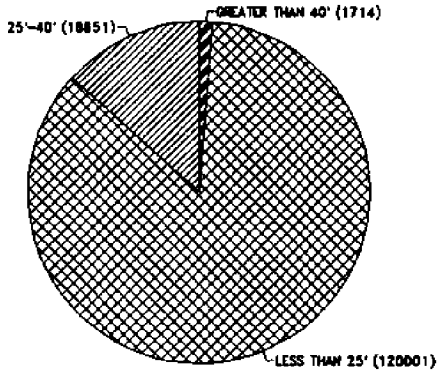

Figure 20. ***Size distribution of registered recreational vessels in New York's marine district.***

As would be expected from the boat size data, the majority of boats (82 percent (n=56)) represented in the survey had installed toilets and 86 percent of those with installed toilets had a holding tank (Figure 21). The type of equipment used was strongly related to boat size. Smaller boats less than twenty-five feet tended to have portable toilets or no toilet facilities while boats twenty-five feet and up had toilets and, for the most part, holding tanks. Although this sample was rather small, the pattern in equipment usage was very similar to that observed in a survey of almost 700 boats in the Long Island area (Tanski, unpublished data) (Figure 22). This similarity indicates that in terms of equipment found on board the sample for this survey accurately reflects the trends found in the general boating population, but is more representative of the larger size classes.

The capacity of the holding tanks found on the surveyed boats ranged between 5 and 60 gallons but averaged 19.2 gallons (n=36). Interestingly, these figures correspond almost exactly with the figures for the average volume of waste collected per pumpout derived from data collected in the facility operators survey. The calculated average volume per pumpout was 19 gallons with a high of 60 gallons. This close agreement between independent sources indicates the estimates of the amount of boat waste produced from the survey data are valid.

Change in Use

The responses to Questions 6 and 7, which were intended to gauge potential changes in use patterns after receiving the directory, were somewhat ambiguous due, in part, to the wording of

the question and, in part, to the variety of factors that influence whether a boater will need pumpout facilities. These factors include such things as whether the boat is being used and

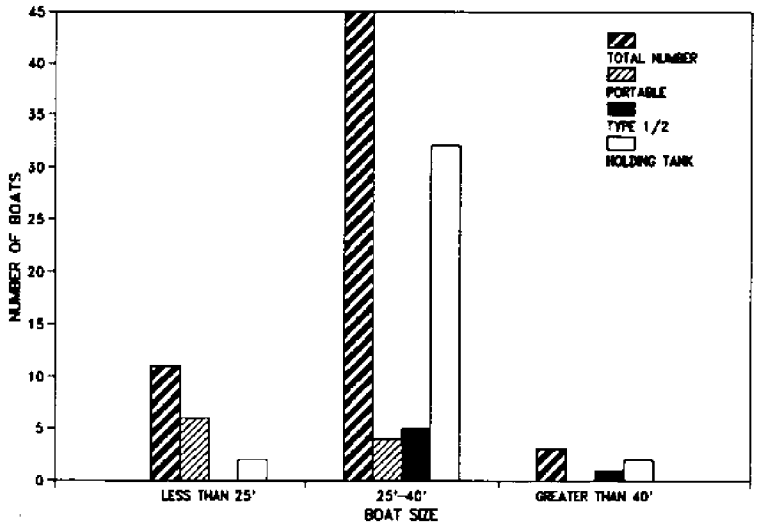

Figure 21. ***Type of sanitation equipment found on surveyed boats. "TOTAL NUMBER" = Total number of boats; PORTABLE = Portable toilet; TYPE 1/2 = Type I or II MSD and "HOLDING TANK" = Type III MSD.***

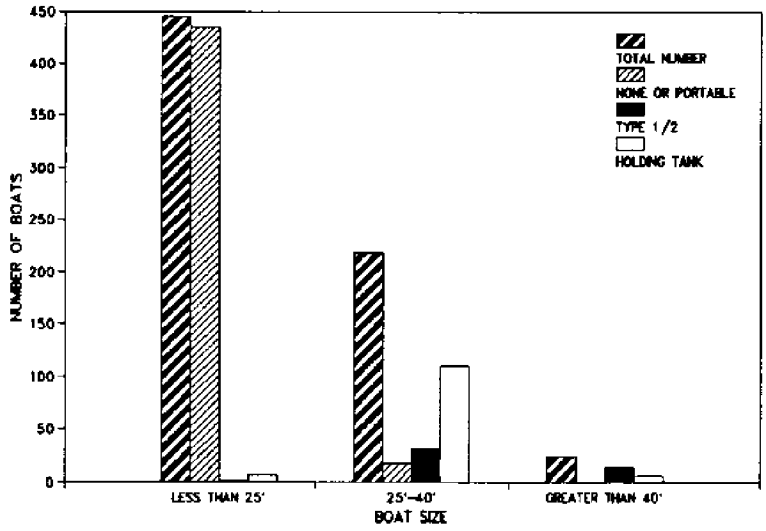

Figure 22. ***Distribution of marine sanitation equipment by boat size based on a survey of 688 boats. "NONE OR PORTABLE" indicates no facilities or a portable toilet on board.***

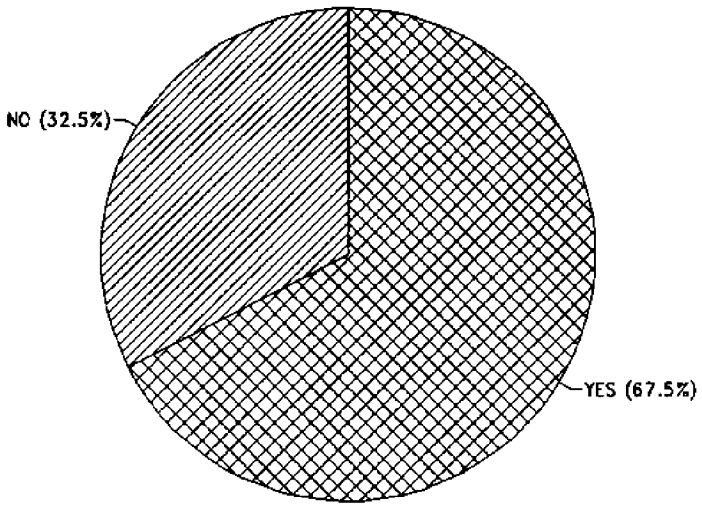

Figure 23. ***Distribution of respondents regularly using pumpout services before receiving directory. (n=40)***

whether stations are accessible.

Before receiving the directory, 27 respondents indicated they regularly pumped out their holding tanks, 13 said they didn't and 22 indicated the question was not applicable to them. Considering only the positive and negative responses, 68 percent of those surveyed regularly used pumpouts before receiving the directory (Figure 23). The number of pumpouts per season ranged between 0 and 30 and averaged 5.2 (n=24).

After receiving the directory, the majority of respondents (21) indicated they utilized the facilities listed, 10 did not and 30 indicated the question was not applicable to them. Although the sample size was smaller, the percentage of the people indicating they did use the facilities after receiving the directory was the same (68 percent) as those regularly using pumpout stations before they saw the brochure. (Figure 24). The average number of times they pumped out their holding tanks increased slightly from 5.2 to 5.9 pumpouts per season.

Although the figures concerning the overall percentages of people using the pumpout facilities would appear to indicate that there was no change in usage patterns after receiving the directory, this is not necessarily the case. Factors other than boater awareness often control the need for pumpout services. These factors can tend to mask or overshadow the impact of educational efforts such as the directory.

Table 1 shows the reasons given for not using pumpout facilities both before and after receiving the directory. As can be seen, the most popular reason for not using the facilities after obtaining the directory was that they received the publication too late in the season, implying they will use it next year. The second and third most-mentioned reasons for not using the stations listed in the brochure were these facilities were not accessible and people weren't using their boats. Obviously, educational efforts would not be expected to change behavior controlled by these factors.

A more detailed examination of the individual responses indicated some behavior changes occurred after receiving the directory. For example, almost half of the respondents (6 of 13) who said they didn't pumpout before receiving the directory indicated they started using the facilities after receiving the brochure. Before receiving the directory, four respondents indicated they

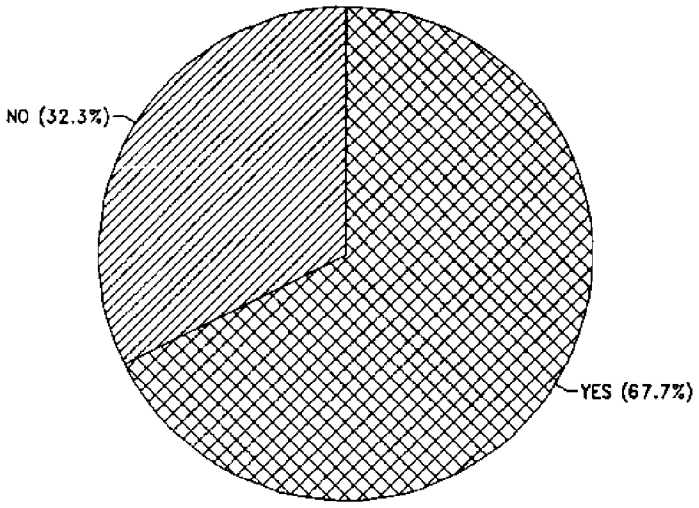

Figure 24. ***Distribution of respondents indicating they used facilities listed in the directory after receiving it (n=31).***

didn't use pumpout stations because they dumped offshore. After receiving the directory, three of these boaters indicated they changed this practice and started using the pumpout facilities. This type of behavior change clearly suggests the brochure had a beneficial impact. While these numbers are small due to the sample size of the survey, one can assume similar changes are taking place on a larger scale as a result of the distribution of the 50,000 brochures and other awareness efforts.

TABLE 1. Reasons given for not using pumpout stations before and after receiving the pumpout directory.

REASON	NUMBER OF RESPONSES	
	Before	After
Directory received too late	0	6
Facilities not accessible	3	5
Boat not used	2	4
Pumped offshore	4	1
No holding tank	2	1
Facilities too crowded	0	1
Didn't know station location	1	0

Evaluation of Directory

Content: Overall, the recipients seemed very satisfied with the content and format of the directory itself. Ninety-eight percent (n=58) thought the information presented was easily understood and 96 percent (n=51) found it useful, indicating that the brochure was written at the appropriate level for the intended audience. Seventy-nine percent of the respondents said the information presented was new to them. The high response rate to this question demonstrates the need for continued educational efforts in this area.

Seventy percent (n=59) of the respondents indicated they shared the directory with other people. The number of people ranged from 1 to 300 and averaged slightly over 28. Sharing of information among boaters is an important means for increasing distribution and can serve as an effective multiplier for these types of educational efforts. For example, several people indicated they shared the directory with their Coast Guard Auxiliary classes or the members of their boating or yacht clubs. One indicated he incorporated the information into a commercially-published boating guide he wrote (see Appendix F). Eldridge's, a well-known boating publication in the Northeast, also requested and received permission to include the information contained in the directory in their upcoming edition. Use of outlets like these greatly increases the potential audience for these educational efforts and should be encouraged.

Suggestions for Improving Future Directories: Respondents offered several suggestions for improving the usefulness of the directory. The individual comments are listed in Appendix F. While the ideas presented were quite diverse and, in some cases, addressed issues beyond the scope of the directory itself, a few common themes did emerge.

A number of respondents indicated the need to periodically update the brochure due to the changing nature of the location and number of pumpout stations in the area. As mentioned previously, between the time the research identifying the stations was completed and the brochure was printed, several new stations came on line. Others, that were planned and listed as proposed in the directory, were not completed for a variety of reasons even after the brochure was released. To maintain accuracy it is important that educational materials regarding the availability of pumpout services be updated regularly, preferably on an annual basis. Fortunately, some federal funding for this type of work is available to the states through the Clean Vessel Act of 1991 which is administered by the U.S. Fish and Wildlife Service.

Wider distribution of the directories was also identified as a way of improving their usefulness. Although a number of different outlets were used to disseminate the publication to boaters, several boaters suggested that distribution could be improved through a program where the directories would be sent out with state boat registration materials. In fact, the directories were specifically designed to fit in a standard No. 10 business envelope so they could be distributed in this manner. This method of distribution should be explored with the appropriate state officials in future efforts.

The responses to this question also revealed another educational need not necessarily related to the directory itself. Several respondents suggested that instructions on how to use pumpout equipment are needed. While the diversity of stations used would preclude a single set of generic instructions for all facilities, development of educational materials on how to use the various types of equipment presently available should be considered. This material could be distributed at "point of service" outlets to encourage use.

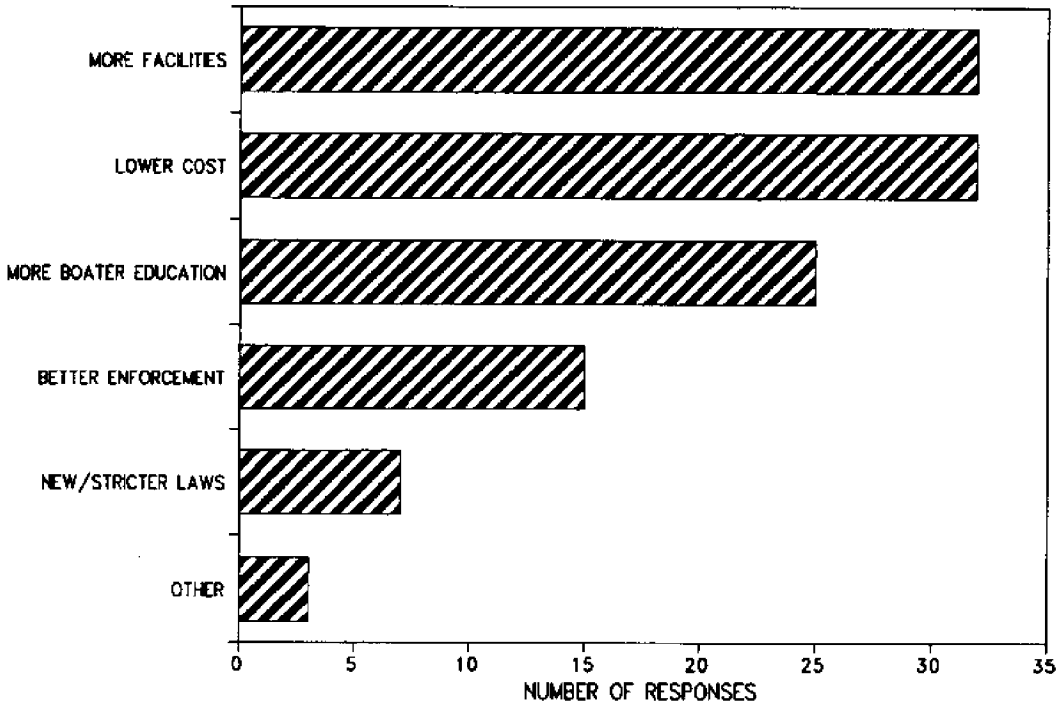

Figure 25. ***Measures identified by boaters as being most effective in reducing illegal vessel discharges.***

Suggestions for Reducing Illegal Discharges

When asked what two measures would be most effective at reducing illegal vessel discharges, the majority of boaters identified increasing the number of facilities and lowering the the fees charged as the top priorities. Judging by the number of individual responses, both measures were considered equally important (Figure 25).

The identified need for more facilities is somewhat surprising considering the low level of use reported at the existing stations. However, this response may indicate the need for a better geographical distribution of facilities to ensure all boating areas are adequately covered.

As discussed previously, all of the present stations are operating at a loss even with their present fee structures. Further reductions in charges would require higher subsidies from the station operators whether they be public or private entities. Cooperative grant programs, such as the Clean Vessel Act, may be helpful in providing adequate services while keeping costs to consumers down. These types of grants may be particularly important for smaller recreational

boating facilities.

Education and awareness programs were also ranked highly as a means of reducing illegal discharges indicating that boaters value and respond to these efforts. Less popular were options involving better enforcement and implementation of new, stricter laws for boaters. Given the sample population consisted primarily of boaters, this result is not all that surprising.

Boat Use Patterns and Demand for Pumpout Services

Even for those respondents who indicated they regularly pumped out their holding tanks, the actual number of pumpouts reported was quite low, averaging less than 5.9 pumpouts per season (based on 18 responses after receiving the directory). The number of pumpouts reported ranged between 0 and 23 a season. These data suggest there is a great deal of variability in the need for pumpout facilities among the individual boaters. One factor that would be expected to influence the need for pumpout services is the amount of time the boat is occupied.

The distribution of use in terms of the number of days and nights spent on board is shown in Figure 26. The respondents indicated they spent an average of 41 days boating per season (n=57). This figure agrees well with similar estimates made by Eldridge (1989), who in a survey of 289 Rhode Island boaters found that people with boats in the 25 to 35 foot size range used their boats an average of 40 days per year. This close agreement indicates the survey responses regarding boat use are representative of the general boating public for the larger size classes. As can be seen, the average was skewed toward the higher side by a relatively small number of

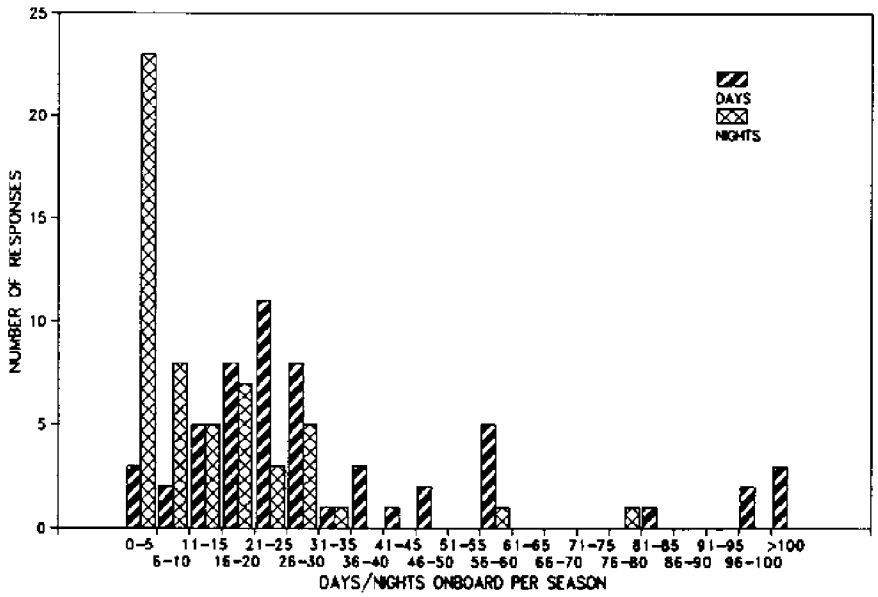

Figure 26. ***Distribution of boat use in terms of number of days and nights spent on board.***

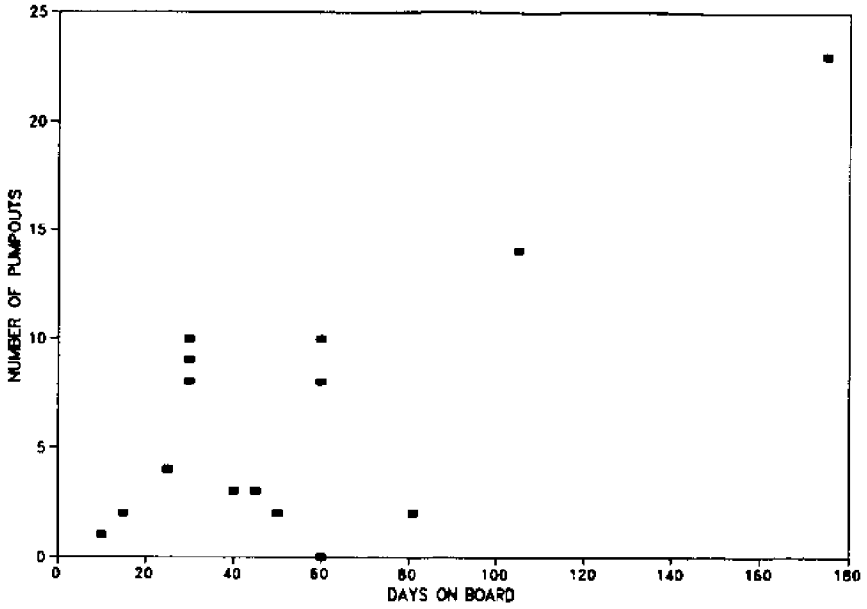

Figure 27. ***Relationship between pumpouts per season and occupancy in terms of days spent on board. (R^2=0.59)***

respondents who spent in excess of 90 days boating. In terms of individual boaters, the majority spent less than 30 days on board during the season.

A similar trend was observed for the number of nights people slept on their boats. The calculated average was 16 nights (n=56), but over 40 percent of the individual respondents indicated they spent less than five nights on board per season.

To examine the relationship between boat use and the demand for pumpout services, the number of pumpouts per season were plotted against the number of days (Figure 27) and nights (Figure 28) spent on board for the individual boaters supplying this information.

As can be seen, the correlation between the number of times holding tanks were pumped out during a season and the number of days spent on board appears stronger than the correlation between pumpouts and nights spent on board (R^2= 0.52 and 0.07, respectively). This suggests that days on board might be a better indicator of boat use than nights spent on board when making estimates of potential pumpout demand. To get an estimate of how often boaters tend to use pumpout services, the survey data were used to calculate the ratio between the number of days on board and the number of times the holding tank was pumped out per season for those respondents indicating they regularly pumped out their tank. Although the sample size is small (n=15), the data collected in this survey suggests that, on average, the boater can be expected to use a pumpout station once for every ten days they are on board.

This relatively low level of use is consistent with the use data reported by the operators in this

survey tends to support the contention of marina owners and others (Ross and Amaral 1992; Browne 1989) that boaters tend to avoid using the heads on their boats when other options, such as shoreside facilities are available. This type of behavior tendency may also help explain the apparent lack of any consistent relationship between pumpouts and nights spent on board as indicated in Figure 28.

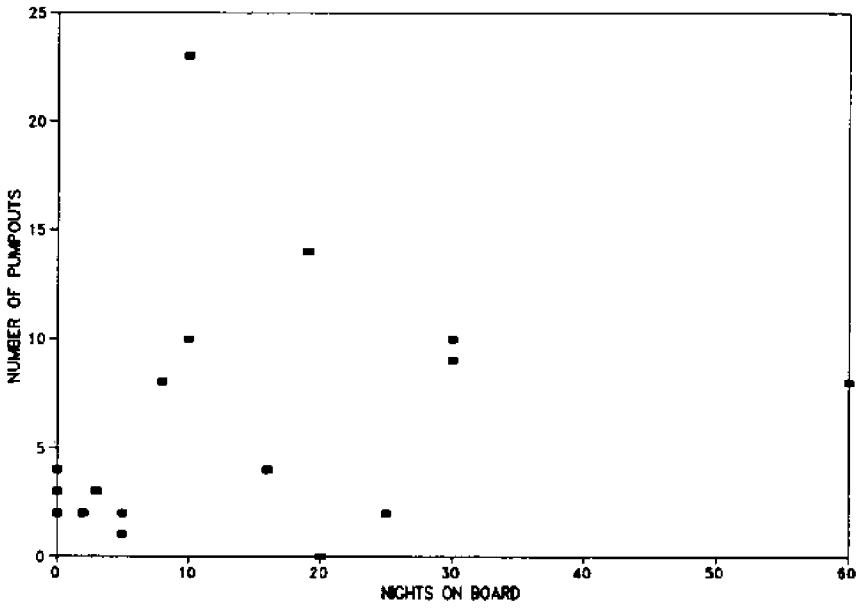

Figure 28. ***Relationship between number of pumpouts and occupancy in terms of nights on board (R^2= 0.07).***

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APPENDIX A
Pumpout Directory

99 Mussel Dock
Patchogue Bay
516-475-4302
Free
May 1-Oct 31
M-F 5:00a-12:00p
Daily
4ft

10 Sandspit Town Marina
Patchogue River
516-475-1502
Free
May 8-Nov 1
Daily
Ch 16 65
To Open 6-92.
For Town Residents

1 Wagner's River Point Marina Serv.
Patchogue River
516-475-0512
35-$10
Year Round
8-8 Daily
Ch 16, 9ft

1a Pier 99
Patchogue River
516-654-3198
Apr 1-Nov 30
8a-5p, Daily
Ch: 12, 9ft

2 Corey Creek Park & Marina
Corey Creek
516-363-6045
Free
May 8-Nov 1
Daily
To Open 8/92, For Town Residents

3 Suffolk County Park, East Marina
Connetquot River
516-581-8295
Free
Apr 1-Oct 30 7-3
Jan-Sep 7-6.
Daily
4ft

5 Sailor's Haven Marina
Great South Bay
516-597-8183
Call For More Information

5 East Islip Marina
Quantuck Creek
516-224-5648
Free
Apr 15-Oct 15
Daylight Hrs : Daily

96 Absecon Marina
Great South Bay
516 583-8610
Free
Apr 15-Oct 15
Daylight Hrs : Daily
For Town Residents

97 Bay Shore Marina
Pennsauken Creek
516-224-5648
Free
Apr 15-Oct 15
Daylight Hrs. : Daily

98 Cedrow State Park Marina
State Boat Channel
516-669-0449
Free
Apr 15-Nov 15
24 Hrs. Daily
Ch 67 16 6ft

99 Robert Moses State Park Boat Basin
Fire Island Inlet
516-669-0449
Free
Apr 15-Nov 15
24 Hrs. Daily
4ft

100 Sunbelt 2 Marina
Nogumbaugue Creek
516-957-5800
$10
Apr 1-Oct
8-5, Daily
Ch 69 9ft

101 The Anchorage
Nogumbaugue Creek
516-957-7300
$5
Apr-Nov
8a-5p Daily
6ft

102 Cedar Beach Boat Basin
State Boat Channel
516-589-5949
Free
May 15-Sep 15
24 Hrs. Daily
For Town Residents

103 Tobay Park Marina
Babylon Cove
516-893-7100
Free
May 15 Sep 15
24 Hrs : Daily
For Town Residents

104 Tobay Town Boat Basin
State Boat Channel
516 795 1000
Free
May 1-Dec 1
24 Hrs. : Daily
5ft

105 Treasure Island Marine Basin Corp
Island Creek
516-221-7156
$20
Year Round
8-5, Daily
Ch 68 4ft

106 Wantagh Park Causey Marina
Bellmore Creek
516-785-7777
Free
Jun-Sep
Daylight Hrs : Daily
6ft

107 West End Boat Basin
State Boat Channel
516 785-1600
Free
Apr 15-Oct 15
6-8, Daily
3-8ft

108 Edge Marina
Hudson Canal
516-623 8115
Customers Free.
Public $10
Apr 1-Nov 1
8-4 M-F
Ch 16, 4-5ft

108 Hempstead Town Marina West
Reynolds Channel
516-431-9200
Free
Apr 1-Nov 1
24 Hrs. Daily
8ft

have worked hard to verify the information contained in this ictory. However, Sea Grant cannot guarantee the accuracy or ss of this information. This directory is for informational poses only. Sea Grant does not endorse any of the facilities services listed here. Comments on the directory or additional rmation on pumpout facilities should be sent to: N.Y. Sea nt Extension Program, 125 Nassau Hall, SUNY, Stony Brook, 11794-5002 (516) 632-8730

Sea Grant Colleges assist those using our coastal resources. In New York, Sea Grant is a partnership between the State University of New York and Cornell University. In Connecticut, it is part of the University of Connecticut. In both states, the extension/advisory programs are carried out as part of the Cooperative Extension System. Funds for this work come from the universities listed, the National Oceanic and Atmospheric Administration of the U.S. Department of Commerce, private industry, and communities throughout New York and Connecticut. The programs provide equal opportunities in employment and programs.

We are grateful to the AMI and ESMTA for their support and cooperation in this project and the LIS Resource Center for providing the shoreline map.

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United States Environmental Protection Agency | New York Sea Grant Extension | Connecticut Marine Advisory

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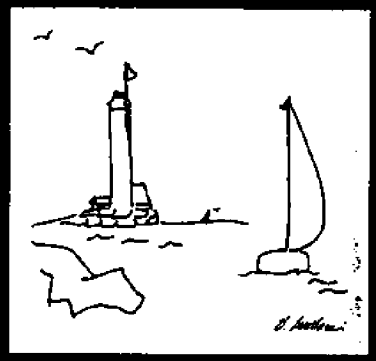
Boat Pumpout Facilities



in New York and Connecticut Marine Waters

Produced by the New York Sea Grant Extension Program and the Connecticut Sea Grant Marine Advisory Program

BOAT PUMPOUT FACILITIES IN NEW YORK AND CONNECTICUT MARINE WATERS

USE YOUR HEAD - DON'T POLLUTE

Boaters, perhaps more than many others, are aware of and concerned about the pollution threats facing our coastal waters. While not a major source of pollution, recreational boaters can contribute to the problem, especially in enclosed shallow bays where boats tend to congregate.

The potential for pollution from boater sewage discharges is of particular concern as this waste may contain disease-causing bacteria and viruses that can contaminate shellfish beds and swimming areas. By following sound environmental practices, boaters can help protect our marine resources.

The Federal Clean Water Act requires all boats with an installed head to have one of three types of Coast Guard-approved marine sanitation devices (MSDs) attached to the toilet. ***Failure to comply can result in a $2000 fine.***

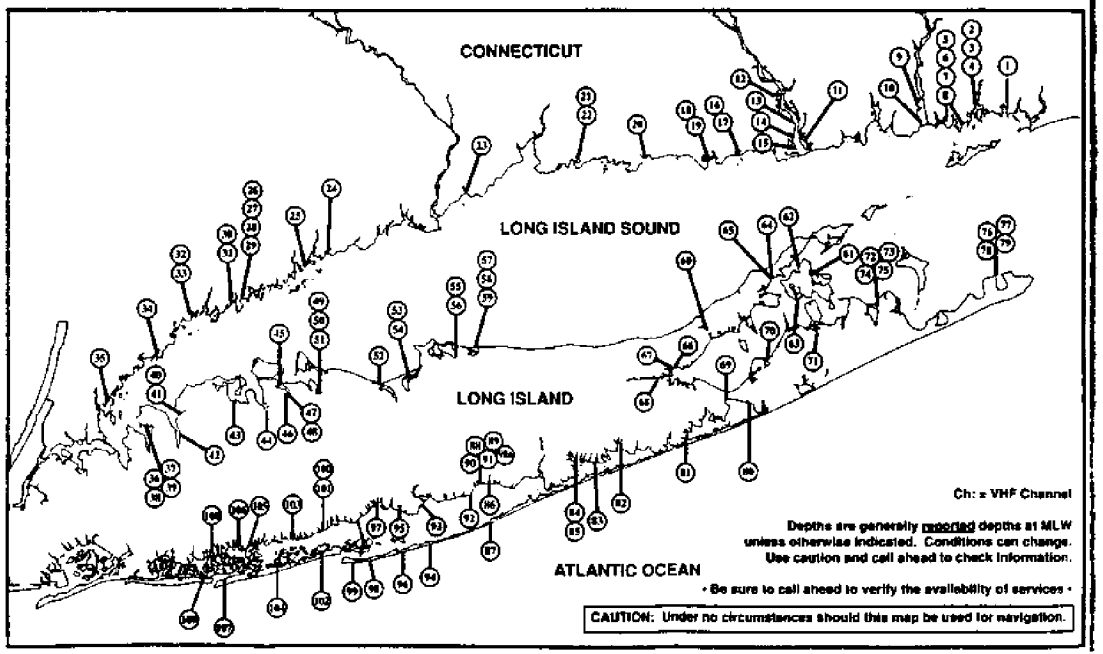
Type I and II MSDs are flow-through systems that treat the sewage using chemical, electrical and/or incineration methods before discharging the waste overboard. If you have a Type I or II MSD don't discharge it while in confined, shallow waters, marinas, shellfish beds or bathing areas. Only use it well away from shore in open deep waters with strong currents that help disperse the waste. Try to use shoreside facilities whenever possible.

Type III MSD's are holding tanks that store sewage on the boat. The waste is not treated in a Type III device, even if odor reducing chemicals are added. **It is illegal to discharge or empty the contents of your boat's holding tank in U.S. territorial waters** (within the 3-mile limit). **Type III** holding tanks must be emptied at pumpout stations. Local facilities are listed in this directory

Discharging raw sewage from any boat within 3 miles of shore is illegal. Some boats have a "Y"-valve installed on the MSD that allows for the direct discharge of raw sewage. However, this valve can only be used outside of U.S. waters. **Coast Guard regulations require that the "Y"-valve must be secured in the closed position (by a padlock, non-releasable tie, removal of the handle or other physical barrier) when the boat is within 3 miles of shore. Boaters can be fined for non-compliance!**

If you use a portable toilet, remember it is against the law to dump it overboard. Use shoreside facilities to empty them.

By following simple, sound environmental practices we can help keep our coastal waters clean and healthy. Be a part of the solution.



1 Dodson Boat Yard
Stonington Harbor
203-535-1507
$10-$30+
May 15-Sep 15
8-5 Call
Ch 9

2 Mystic Cove Yacht Club
Mystic River
203-572-9939
Customers Free
Public $15
Call
7-5, Daily
Ch 9

3 Brewer Yacht Yard
Mystic River
203-536-2293
Free
May-Sep
8-5, Daily
For Customers Only

4 Greenmanville Marina
Mystic River
203-536-3123
$10-$20+
May 15-Sep 25
8-5 Call
Ch 9, 68

5 Noank Village Boatyard
Mystic Harbor
203-536-1770
$20
May-Sep
8-5, M-Sa
Ch 68

6 Noank Shipyard, Inc.
Mystic Harbor
203-536-9436
$10-$20+
May 15-Sep 15
8-5; Call
Ch 9

7 Sailor's Noank Marina
Mystic Harbor/W Cove
203-536-9436
$27
Apr 15-Nov 1
8:30-5, M-F

8 Harbor Marine Services
Mystic Harbor
203 572-8639
$10-$20+
May 15-Sep 15
8-5 Call

9 Ferry Slip Development
New London Harbor
203-442-8039
$20
8-5 Daily
Free
Year Round
8-5, Daily
Ch 16; 9A

10 Americas Wharf Marina
New London/ Greens Harbor
203-886-1511
$4
May-Sep
8-8; Daily
Ch 68

11 Cove Landing Marina
CT River
203-434-5240
$30
Year Round
7:30-4:30 Daily
9A

12 Chelsea Inn Marina
CT River
203-526-5147
Free
Year Round
8-5, Daily
Ch 16; 9A

13 Deep River Marina
CT River
203 526-9560
Free
May Oct
8-5, Tu-Su
16A

14 Brewers Deerfield Shipyard
CT River/N. Cove
203 767 2483
$25+
Call
7:30-5, Tu-Su
Ch 16,9

15 River Landing Marina
CT River
203-388 1431
$60
Year Round
7-4:30, Daily
Ch 16, 9A

16 Harry's Marina Regan
Westbrook Harbor
Patchogue River
203 399 6165
$20
Apr-Oct
M-F 8-5,Sa Su 9-3; Daily
7A

17 Pilot's Point Marina
Westbrook Harbor
Patchogue River
203-399-7900
Customers Free.
Public $20
May-Sep
7-7; Daily
Ch 16, 9A

18 Clinton Yacht Haven
Clinton Harbor
203 669 7254
$25
May 1-Nov 1
8-5, Daily
6,9A

19 Cedar Island Marina
Clinton Harbor
203-669 8681
Customers Free
Public $.50/h
Year Round
8-4:30, Daily
Ch:16,9

20 Guilford Yacht Club Marina
Guilford River/ West River
203-453-8746
$25
May Sep
8-5; Daily
Ch:16

21 Bruce A Johnston's Marina
Branford River
203-488 8329
$25
Year Round
Call Daily
Ch 16, 9A

22 Goodsell Point Marina
Branford River
203 488 8292
Call
May 1-Nov 1
M-F 8-5,
Sa 10-12, M-Sa 9A

23 Milford Boat Works
Milford Harbor
203-877-1475
Free
May-Oct
8-7, Daily
9A
Gas Dock Hours

24 Bound Digassat Inc.
Five Mile River
203-853-7247
$20
May-Oct
8-5, Daily
Ch 9

25 Norwalk Cove Marina
Norwalk Harbor
203-838-2329
$15-$25
Year Round
8-5, Daily
Ch:16, 10A

26 Stamford Harbor Club
Stamford Harbor-
E. Branch
203-348 7700
Free
Year Round
24 Hrs.; Daily

27 Harbour Square Marina
Stamford Harbor-
E. Branch
203 978-0084
$10-$25
Year Round
Seas: 8-5 Off
Seas: 9-5; Daily
Ch 9; 7A

28 Cavanah Marina, Municipal
E. Branch
Stamford Harbor
E. Branch
203-977-4667
Free
Year Round
24 Hrs., Daily

29 Cove Municipal Marina
Stamford Harbor
E. Branch
203-977-4667
Free
Apr 15-Oct 15
24 Hrs., Daily

30 Cummings Marina, West Branch
Stamford Harbor-
W. Branch
203-977-4667
Free
Apr 15-Oct 15
24 Hrs., Daily

31 Stamford Landing Marina, W. Branch
Stamford Harbor-
W. Branch
203-969-0065
$15
Year Round
Seas: 9-5, Or
Seas: 10-3 Daily
Ch 9

32 Marina River Boat/Yacht Club
Marina River
203-969-4680
Call For More Information

33 Greenwich Point Beach
Greenwich Harbor
203-869-8689
$7-$15
Year Round
M-Th 10-6, F-Su 8-6, Daily
Ch 16; 10A

34 Rye Municipal Boat Basin
Mayn Harbor
914-967-2011
Free
Year Round
24 Hrs. Apr-Dec; Daily
Ch:16; 4,9A

35 Manhasset Landings, Inc.
City Island Harbor
212-885-1800
$15+
Apr 15-Oct 15
8-5; Daily
Ch 68, 9A
To Open 4/15/92

36 Capri Marina Inc.(East Yard)
Manhasset Bay
516-944-3800
Customers Free,
Public $15
Year Round
Daylight Hrs.; Daily
Ch:16; 9A

37 North Bay Marina
Manhasset Bay
516-767-0110
Free
Year Round
24 Hrs.; Daily
Ch 68,16; 9A

38 Port Washington Town Dock
Manhasset Bay
516-328-8500
Free
Apr 15 Nov 15
8a-10p, Daily
9A

39 Tom's Point Marina
Manhasset Bay
516-883-6630
$15(Self-service Fee)
Year Round
8-5, Daily
Ch 78; 9A
For Customers Only

40 Glen Cove Yacht Service & Repair
Glen Cove Creek
516 676-0777
$25
Apr 1 Nov
8-5, Daily
9A

41 Brewer Yacht Yard
Hempstead Harbor
516-671-5563
$30
Apr-Dec
8-5, Daily
Ch:16,72, 9A
For Customers Only

42 Harry Tappen Marina
Hempstead Harbor
516-671-0484
Free
Year Round
24 Hrs., Daily
Ch:16, 9A

43 Roosevelt Town Boat Basin
Oyster Bay Harbor
516-795-1000
Free
Year Round
24 Hrs., Daily
Ch:16; 9A

44 Cold Spring Harbor Town Dock
Cold Spring Harbor
516-351-3256
Free
Apr 1-Dec 31
24 Hrs.; Daily
7A
Planned for 6/92

45 Castle Cove Marina
Huntington Harbor
516-673-3299
Free
Apr 1-Dec 31
24 Hrs ; Daily
Ch:16,9; 10A
Planned for 6/92

46 West Shore Marina
Huntington Harbor
516-427-3444
$10
Year Round
8-5, M-Sa
Ch 16; 9A

47 Mill Dam Marina
Huntington Harbor
516-351-3085
Free
Apr 1-Nov 30
24 Hrs., Daily
Ch:16,9, 10A

48 Halesite Town Marina
Huntington Harbor
516-351-3282
Free
Apr 1-Dec 31
24 Hrs., Daily
Ch:16,9, 10A

48 Seymour's Marina
Northport Harbor
516 261-6574
$25
Apr 15-Oct
8-4; Daily
Ch:68, 10A

50 Woodbine Marina
Northport Harbor
516-351-3288
Free
Apr 1-Dec 31
24 Hrs.; Daily
9A

51 Britannia Yacht and Recreation Club
Northport Harbor
516-261-6600
$20-$25
Year Round
8-5, M-F
Ch:9, 68A

52 Old Dock Town Mooring Area
Nissequogue River
516-862-6663
Free
Apr 15-Nov 15
24 Hrs.; Daily
Ch:16; 6-7A
For Town Residents

53 Long Beach Mooring Area
Stony Brook Harbor
516-862-6663
Free
Apr 15-Nov 15
24 Hrs.; Daily
Ch:16; 6A
For Town Residents

54 Long Beach Town Marina
Stony Brook Harbor
516-862-6662
Free
Apr 15-Nov 15
24 Hrs.; Daily
Ch:16, 6A
For Town Residents

55 Port Jefferson Town Marina
Port Jefferson
516 331-3687
Free
Ch:16,68
14 Upon 6/92, For Town Residents

56 Rhodes Oyster, Inc.
Port Jefferson
516 928 5800
May 1-Sep 30
8-4; Daily
Ch:9, 10A
For Customers Only

57 Old Man's Boatyard
Mount Sinai Harbor
516 473-7800
9A
To Open 6/92

58 Mount Sinai Yacht Club
Mount Sinai Harbor
516 473-2800
Ch 16, 68A
To Open 5/92

59 Mount Sinai Town Marina
Mount Sinai Harbor
516 928-0100
Planned for 92

60 Mill-A-Mar Marina, Inc.
Mattituck Creek
516 298-4720
Customers Free,
Public $10
Apr 15-Dec 1
8-5 Daily
Ch 16; 5-7A

61 Cowutaw Harbor Marina
Cowutaw Harbor
516 749-0700
$15
Year Round
8-4:30, Summer Daily, Off Seas.
M-F
Ch 16; 7A

62 Daring Harbor Marina
Daring Harbor
516 749-0845
$10
May 1-Oct 1
7:30-7:30 Daily
Ch 16, 9A

63 Mount Sinai Yacht Yard
West Neck Harbor
516 749 3232
$20
Apr-Nov
8-5 Daily
Ch 16, 9A

64 Brick Cove Marina
Sage Creek
516-477-0830
Customers Free,
Public $20
Apr-Nov
8:30-4:00, Daily
8,9A

65 Port of Egypt Marina
Bubble Pond
516 765-2445
$5
Mar-Dec
8:30-4:00, Daily
4,9A

66 Downtown Cove Market
Flanders Bay
516 722 3212
To Open 5/92

67 Larry's Lighthouse Marina
Meetinghouse Creek
516-722-3400
$25
Apr 15-Oct 1
8-5, Daily
10A

68 Peconic River Yacht Basin
Peconic River
516-727-6386
$20
Year Round
8-5, Daily
Ch 16; 9A

69 Shinnecock Canal
Country Boat Basin
Shinnecock Canal
516-852-8291
Free
Apr 1-Oct 30 7-3
Jun-Sep 7-8,
Daily
7A

70 Canoe Place Point Marina
North Sea Harbor
516-283-8295
Ch 16, 9A
Call for Information

71 Sag Harbor Municipal Dock
Sag Harbor
516-725-2368
10-91 ignition
Apr 1-Oct 31
W-Sa Su
Ch 16; 9A

72 Harbor Marina
Three Mile Harbor
516-324-5666
$25
May 15-Oct 15
8:30-4:30; Daily
Ch 16,9, 7A

73 East Hampton Town Bulkhead
Three Mile Harbor
516 324 3079
Year Round
8-5, Daily
9A
To Open 7/92

74 Napeague Harbor Marina
Three Mile Harbor
516-324-8684
Ch 9, 9A
To Open 6/92

75 Gardiner's Marina
Three Mile Harbor
516-324-8684
Ch 9, 9A
To Open 6/92

76 Captain's Cove Marina Ltd.
Lake Montauk
516-668-5995
By Appointment
7A
For Customers Only

77 Montauk Marina Basin
Lake Montauk
516-668-5800
Apr-Nov
By Appointment, Daily
Ch 19,16; 9A

78 Montauk Yacht Club Resort & Marina
Lake Montauk
516-668-3100
Free
May-Oct 15
8-5 Daily
Ch 16; 10A
For Customers Only

79 Gone Fishing Marina
Lake Montauk
516-668-3232
$15
Year Round
Call, Daily
Ch 16; 9A

80 Sherry & Jim Corn's Boat Boat Works
Old Fort Pond
516-283-7359
$5-$20
Apr 1-Nov
8-5, Daily
Ch 68, 4, 9A
For Customers Only

81 Bath and Tennis Yacht Club
Quantuck Cove
516-288-0380
Free
May 1-Oct 15
9-5; Daily
Ch 16; 9A
For Customers Only

82 Seatuck Cove Marina
Seatuck Cove
516-325-5367
$15
May 15-Nov 15
8-5, M-Sa
4A

83 Cerullo Brother Marina
Menches Bay
516-878-1180
Customers $5,
Public $10
Apr 1-Nov 1
8-5; Daily
Ch:68, 9A
To Open 6/92

84 Breakwaters Yo Dock
Forge River
516-461-6100
Free
May 8-Nov 1
Daily
To Open 5/92 1
Town Resident

85 The Watermen at Sagaponack Mr
Forge River
516 678-8767
Call For Information

86 Morgan's Seat River Marina
Green River
516-756-3524
$20
Apr-Oct
By Appointment
Daily
Ch 16; 4A
For Customers Only

87 Welch Hill Great South B
516-597-6644
Call For Inform

88 Lawrence Cove Marina
Patchogue Bay
516-758-2950
Customers Free
Public Call
Apr 15-Oct 30
7-7, Daily
9A

APPENDIX B
Media Coverage

Sea Grant Extension Program *of the New York Sea Grant Institute*

Cornell University • State University of New York • NOAA

New York Sea Grant
125 Nassau Hall
SUNY at Stony Brook
Stony Brook NY 11794-5002

Phone: (516) 632-8730
Fax: (516) 632-8216

NEWS RELEASE

For Immediate Release
May 5, 1992

FOR MORE INFORMATION:
Jay Tanski
(516) 632-8730

FREE DIRECTORY OF BOAT PUMPOUT FACILITIES AVAILABLE FROM SEA GRANT

To help New York and Connecticut boaters plan more environmentally-sound cruises this summer, the New York Sea Grant Extension Program and the Connecticut Sea Grant Marine Advisory Program have developed a directory of all the boat sewage pumpout facilities in area waters. The directory, funded through a grant from the U.S. Environmental Protection Agency, covers the south shore of New York's Long Island as well as Long Island Sound, Block Island Sound and the Peconic-Gardiners Bay system.

In addition to a map showing the location of over 100 pumpout stations, the directory contains information on costs, availability, water depths and other pertinent information about the facilities listed. The rules and regulations governing toilets and marine sanitation devices on boats are also summarized.

This directory can be obtained free of charge by sending a stamped self addressed envelope to: **Boat Pumpout Directory, New York Sea Grant Extension Program, 125 Nassau Hall, SUNY-Stony Brook, Stony Brook, NY 11794-5002**

---------- End ----------

Sea Grant Extension Program *of the New York Sea Grant Institute*

Cornell University • State University of New York • NOAA

New York Sea Grant
125 Nassau Hall
SUNY at Stony Brook
Stony Brook NY 11794-5002

Phone: (516) 632-8730
Fax: (516) 632-8216

FREE PUMPOUT DIRECTORY AVAILABLE

Sea Grant has produced a directory of pumpout facilities for boaters in New York and Connecticut marine waters. In addition to a map showing the location of over 100 pumpout stations on the north and south shores of Long Island, the Peconics, and the Connecticut coastlines; the directory also contains information on costs, availability, water depth and other pertinent information about the facilities. The federal regs regarding boat heads are also summarized.

Multiple copies are available free of charge to members who would like to distribute the flyers as a service promoting "environmental awareness" to their customers. There is a space for your company stamp on the directories and they are designed to fit into a standard business envelope, making them perfect envelope suffers.

Free copies will be available at the next meeting or by contacting the NYMTA office at (516) 691-7050 or Jay Tanski of NY Sea Grant at (516) 632-8730.

Sea Grant Extension Program *of the New York Sea Grant Institute*

Cornell University • State University of New York • NOAA

New York Sea Grant
125 Nassau Hall
SUNY at Stony Brook
Stony Brook NY 11794-5002

Phone: (516) 632-8730
Fax: (516) 632-8216

Dear Marina Operator,

Thank you for helping us with our recent survey of boat waste pumpout facilities in New York and Connecticut marine waters. Twenty copies of the resulting directory are enclosed for your information and use. You may want to distribute them as a service to your customers. We have left a space at the top of the rear panel for your company's own stamp and the flyers are designed to fit in a standard No. 10 business envelope, making them perfect envelope stuffers.

Additional free copies can be obtained by contacting New York Sea Grant at (516) 632-8730 or writing:

New York Sea Grant
125 Nassau Hall
SUNY at Stony Brook
Stony Brook, NY 11794-5002

Once again, thank you for your help. If I can be of assistance on any marine-related matter, please don't hesitate to contact me.

Sincerely,

Jay Tanski
Extension Specialist

JT/eg
enc.

The attached copy appeared in the current issue (JUL/AUG 1992) on page(s) 6/8.

If you would like additional copies please contact our editorial offices

MARINA DOCK AGE
3949 OAKTON
SKOKIE, ILLINOIS 60076
Phone (312) 982-1810
Fax: (312) 675-7402

The Editors

Free Directory of Boat Pumpout Facilities

To help New York and Connecticut boaters plan more environmentally-sound cruises this summer, the New York Sea Grant Extension Program and the Connecticut Sea Grant Marine Advisory Program have developed a directory of all the boat sewage pumpout facilities in area waters. The directory, funded through a grant from the U.S. Environmental Protection Agency, covers the south shore of New York's Long Island as well as Long Island Sound, Block Island Sound and the Peconic Gardiners Bay system.

In addition to a map showing the location of over 100 pumpout stations, the directory contains information on costs, availability, water depths and other pertinent information about the facilities listed. The rules and regulations governing toilets and marine sanitation devices on boats are also summarized.

This directory can be obtained free of charge by sending a stamped self-addressed envelope to: Boat Pumpout Directory, New York Sea Grant Extension Program, 125 Nassau Hall, SUNY-Stony Brook, Stony Brook, NY 11794-5002.

RE NEWS

E of Marina/Dock Age
dis , changes, improve-
in the pleasure boat marketplace. We work hard to make sure that this information gets printed while it is still news. The attached copy should be of interest to you. Congratulations from the editors of M/DA.

Great South Bay Power Squadron

A UNIT OF THE UNITED STATES POWER SQUADRONS
CHARTERED 16 MAY 1941

10 June 1992

Boat Pumpout Directory
New York Sea Grant Extension Program
125 Nassau Hall
SUNY-Stony brook
Stony Brook, NY 11794-5002

Gentlemen:

Great South Bay Power Squadron, a unit of the United States Power Squadron, would like a copy of the new Boat Pumpout Directory re the enclosed article.

I am also interested in handing out this directory to as many members (we have 200) as possible, as well as to new students in our (free) Basic Boating classes that we administer to the public during the year.

Any number of copies that you would be able to send to me in the interest of safe boating as well as environmental protection would be appreciated.

Thank you for your attention.

Sincerely,

Barry M. Schwartz, AP
Past Commander
Great South Bay Power Squadron

BMS

FREE DIRECTORY OF BOAT PUMPOUT FACILITIES AVAILABLE FROM SEA GRANT

To help New York and Connecticut boaters plan more environmentally-sound cruises this summer, the New York Sea Grant Extension Program and the Connecticut Sea Grant Marine Advisory Program have developed a directory of all the boat sewage pumpout facilities in area waters. The directory, funded through a grant from the U.S. Environmental Protection Agency, covers the south shore of New York's Long Island as well as Long Island Sound, Block Island Sound and the Peconic-Gardiners Bay system.

In addition to a map showing the location of over 100 pumpout stations, the directory contains information on costs, availability, water depths and other pertinent information about the facilities listed. The rules and regulations governing toilets and marine sanitation devices on boats are also summarized.

This directory can be obtained free of charge by sending a stamped, self-addressed envelope to: Boat Pumpout Directory, New York Sea Grant Extension Program, 125 Nassau Hall, SUNY-Stony Brook, Ston) Brook, NY 11794-5002.

...New York

NY/CT Pumpout Station list offered

Sea Grant agencies in New York and Connecticut have combined to offer a free directory of boat sewage pumpout stations in the two states.

OFFSHORE · OCTOBER '92

The directory includes a map showing the locations of some 100 pumpout facilities on Long Island's South and North Shores, the Connecticut shoreline, Block Island Sound and Peconic and Gardiners bays.

The pamphlet also contains information on marine sanitation devices, as well as pumpout station costs, water depths and other essentials.

Send a stamped, self-addressed envelope to Boat Pumpout Directory, New York Sea Grant Extension Program, 125 Nassau Hall, SUNY, Stony Brook, NY 11794-5002.

Sea Grant Extension offers free directory

To help New York and Connecticut boaters plan more environmentally-sound cruises this summer, the New York Sea Grant Extension Program and the Connecticut Sea Grant Marine Advisory Program have developed a directory of all the boat sewage pumpout facilities in area waters. The directory, funded through a grant from the U.S. Environmental Protection Agency, covers the South Shore of Long Island as well as Long Island Sound, Block Island Sound and the Peconic-Gardiners Bay system.

In addition to a map showing the locations of over 100 pumpout stations, the directory contains information on costs, availability, water depths and other pertinent information about the facilities listed. The rules and regulations governing toilets and marine sanitation devices on boats are also summarized.

To receive a free copy of the directory, send a stamped self-addressed envelope to Boat Pumpout Directory, New York Sea Grant Extension Program, 125 Nassau Hall, State University, Stony Brook, NY 11794-5002.

Free directory provides information on boat sewage pumpout facilities

To help New York boaters plan more environmentally sound cruises this summer, the New York Sea Grant Extension Program and the Connecticut Sea Grant Marine Advisory Program offer a free directory of all the boat sewage pumpout facilities in area waters. The directory, funded through a grant from the U.S. Environmental Protection Agency, covers the South Shore of Long Island as well as Long Island Sound, Block Island and the Peconic-Gardiners Bay system.

In addition to a map showing the location of over 100 pumpout stations, the directory contains information on costs, availability, water depths and other pertinent information about the facilities. Rules and regulations governing toilets and marine sanitation are also included.

The directory can be obtained by sending a stamped, self-addressed envelope to Boat Pumpout Directory, New York Sea Grant Extension Program, 125 Nassau Hall, SUNY Stony Brook, Stony Brook, N.Y. 11794-5002.

PASS IT ON

BASIL & MADELEINE STONBELY
333-64TH STREET
BROOKLYN, NY 11209

Boat Desperately Needed

The Sea Explorers, a part of the Boy Scouts of America, is seeking a fiber glass sailboat or power boat. We are a not for profit organization, thus providing a tax writeoff for any donations. For further information call Skipper Ray Bancie at (718) [illegible]

Free Directory Of Boat Pumpout Facilities Available

To help New York and Connecticut boaters plan more environmentally-sound cruises this summer, the New York Sea Grant Extension Program and the Connecticut Sea Grant Marine Advisory Program have developed a directory of all the boat sewage pumpout facilities in area waters. The directory, funded through a grant from the U.S. Environmental Protection Agency, covers the south shore of New York's Long Island as well as Long Island Sound, Block Island Sound and the Peconic-Gardiner's Bay system.

In addition to a map showing the location of over 100 pumpout stations, the directory contains information on costs, availability, water depths and other pertinent information about the facilities listed. The rules and regulations governing toilets and marine sanitation devices on boats are also summarized.

This directory can be obtained free of charge by sending a stamped, self-addressed envelope to: Boat Pumpout Directory, New York Sea Grant Extension Program, 125 Nassau Hall, SUNY-Stony Brook, Stony Brook, NY 11794-5002.

Kaysee Marine Shark Tourney

The ninth annual Kaysee Marine Shark Tournament will be held on Saturday, June 27. Once again it will be the week following the Hudson Anglers Tournament. The rain date will be Sunday, July 5. Entry fee is $150 per boat. All entry fees are returned as prize money and free ice will be provided to all customers.

Moriches Anglers Club

The Moriches Anglers Club will be hosting their Eighth Annual Shark Tournament on June 20. This event will be limited to 100 boats with an entrance fee of $200 per boat. There will be money awards for first, second and third largest fish and a shark tagging award as in the past.

Applications may be gotten by writing to our club at P.O. Box 193, Center Moriches, NY 11934, or from B&B Tackle in Center Moriches.

In the event we are not filled prior to the captains' meeting on Friday, June 19, you can register at that time on a cash entry fee only.

For further information, feel free to call Chet Wilcox at 878-9280.

Random Drug Testing Required

Now that spring is here and vessels will be hitting the open seas, operators of marine firms and crew must be aware of and in compliance with the random drug testing rule required by the Coast Guard. Charter boat companies, marine towing and salvage firms, and water taxis are affected by this regulation.

Random drug testing for commercial vessel personnel went into effect October

Angling For Consonants

Complete the names of the fish below by filling in the blank spaces, using the consonants in the tackle box.

1. _U_A
2. _!__O
3. _E__I__
4. _EA_A__
5. _E_O_ _A_
6. __EA_I__
7. _OE_O__E
8. _E__O _I_
9. _!__E_ _A_E
10. _A__O_ __OO_
11. _E_UIE_ __A__
12. _AI__O_ _U__E_

Tackle Box: BBB CCC DD F GG HHHHH KKK LLLL MMM NNNNNNNNN PP Q RRRRRRR RRR SSSSSSS TT V WW Y

Answers: 1.Clula, 2. Cisco, 3. Herring, 4. Seabass, 5. Lemon Dab, 6. Sperling, 7. Hogchoker, 8. Weakfish, 9. Silver Hake, 10. Tarpon Snook, 11. Hogfish, 12. Rainbow Runner

Schoo

The Glen Cove Board of Education's annual Budget hearing will be held at its regular monthly meeting on June 15 at Glen Cove High School at 8 p.m. The board will address any concerns and answer any questions members of the public may have at that time.

Boat Pumpout Facilities

To obtain a directory of boat sewage pumpout facilities in area waters send a stamped self addressed envelope to: Boat Pumpout Directory, New York Sea Grant Extension Program, 125 Nassau Hall, SUNY-Stony Brook, Stony Brook, NY 11794-5002.

Another Public Service from the Huntington Pennysaver Inc.

n THE PENNYSAVER"

On Pumping Out

The New York Sea Grant Extension Program and the Connecticut Sea Grant Marine Advisory Program have developed a directory of all the boat sewage pumpout facilities in area waters to help New York and Connecticut boaters plan more environmentally sound cruises this summer.

The directory, funded through a grant from the U.S. Environmental Protection Agency, covers the south shore of Long Island as well as Long Island Sound, Block Island Sound and the Peconic-Gardiners Bay system.

In addition to a map showing the location of more than 100 pumpout stations, the directory includes information on costs, availability and water depths. The rules and regulations governing toilets and marine sanitation devices on boats are also summarized.

The directory can be obtained free of charge by sending a stamped self-addressed envelope to: Boat Pumpout Directory, New York Sea Grant Extension Program, 125 Nassau Hall, SUNY/ Stony Brook, Stony Brook, NY 11794-5002.

SOUTHFOLK TIMES JUNE 4 1992

"House torpedoes boat 'users fee' tax."
(reprinted with permission and thanks to Managing Editor of "Suffolk Life" Newspapers: Wednesday May 27th '92)
(excerpts as follows...)

****

* The U.S. House of Representatives voted 339 to 78 to repeal the controversial 18- month old "user fee" tax, which affects 4.1 million boat owners.
* The legislation approved by the House, H.R. 2056, phases out the recreational boat "user fee" in three steps. the fee would be repealed on October 1 '92 for boats 21' or less: on October 1 '93 for boats 37' or less; and by September 30th for all remaining boats. Rep. Bob Davis (R-MI) the chief sponsor of the repeal bill estimates that nearly 70 percent of boaters required to pay would be exempt beginning this October 1st.
* Congress has been awash for months with mail from consitutents objecting to the so-called "user fee" because none of the money collected, projected at $718 million over a five-year period, actually goes to the Coast Guard or to any programs benefiting the boaters and anglers, said Schwartz.
(BOAT/US president Richard Schwartz)
* The repeal effort now moves to the U.S. Senate where the chairman of the Commerce Committee, Senator Fritz Hollings (D-SC), has introduced a repeal bill, S. 2702, similiar to the bill approved by the House. The Hollings bill will build on the support already generated by Senator John Breaux (D-LA), who last year introduced a repeal measure, S. 843, which has been co-sponsered by 39 senators. Schwartz called on all recreational boaters subject to the tax to contact their senators and urge them to back Hollings effort.

****

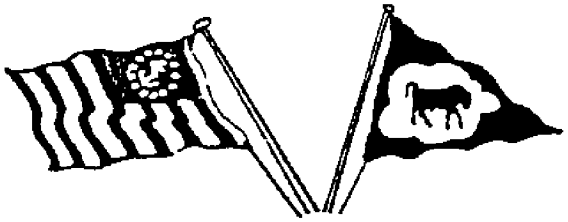
"Free directory provides information on boat sewage pumpout facilities"
(reprinted with permission and thanks to Managing Editor of
"This Week Publications, Inc.
Commack/Smithtown ed.: 5/30/'92)

****

To help New York boaters plan more environmentally sound cruisers this summer, the New York Sea Grant Extension Program and the Connecticut Sea Grant Marine Advisory Program offers a free directory of all the boat sewage pumpout facilities in are waters. The directory, funded through a grant from the U.S. Environmental Protection Agency, covers the South Shore of Long Island as well as Long Island Sound, Block Island and the Peconic-Gardiners Bay System.
In addition to a map showing the location of over 100 pumpout stations, the directory contains information on costs, availability, water depths and other pertinent information about the facilities. Rules and regulations governing toilets and marine sanitation are also included.
The directory can be obtained by sending a stamped, self-addressed envelope to:
Boat Pumpout Directory
New York Sea Grant Extension Program
125 Nassau Hall
SUNY Stony Brook
Stony Brook, New York 11794-5002

****

Smithtown Bay Power Squadron, Inc.



Fly Your Ensign/Burgee Proudly

APPENDIX C
Facility Operators Survey Form

Sea Grant Extension Program *of the New York Sea Grant Institute*

Cornell University • State University of New York • NOAA

New York Sea Grant
125 Nassau Hall
SUNY at Stony Brook
Stony Brook NY 11794-5002

Phone: (516) 632-8730
Fax: (516) 632-8216

JJT7693

September 24, 1993

Maritime Landings, Inc.
521 City Island Avenue
City Island
Bronx, NY 10464

E X A M P L E

Dear Marina Operator:

Last year, Sea Grant (a joint program of Cornell and the State University of New York) worked with the marine industry to develop the enclosed directory of pumpout facilities in New York and Connecticut marine waters. As you can see, your facility was listed. Over 30,000 copies of this directory, which included information on boat sewage regulations, were distributed to area boaters.

To see if this and similar educational efforts directed at boaters are actually working, Sea Grant, in conjunction with the U.S. Environmental Protection Agency, is conducting a survey of boater use of the listed pumpout stations. The primary purpose of this survey is to document changes in the utilization of these facilities. The survey has also been designed to collect information regarding the operation and management of these facilities from a practical perspective. Your responses will be used to help decisionmakers better understand the problems associated with operating these facilities and identify realistic, workable solutions to these problems.

Please take a few moments to complete the enclosed questionnaire and return it in the postage paid envelope provided. All responses are anonymous (no name or address is required). The information you supply will be compiled and reported in aggregate form by Sea Grant. Your participation is vitally important and will ensure that the best possible information is being used by decisionmakers and others in addressing issues associated with boat sewage and pumpout facilities.

Thank you very much for your time and input. If you have any questions about the survey, want additional information or would like a copy of the survey results, please don't hesitate to contact me at (516) 632-8730.

Sincerely,

Jay Tanski

Jay Tanski
Extension Specialist

JJT/eg
enclosures

SEA GRANT MARINA
PUMPOUT USE SURVEY

(Please check or fill in appropriate response. If exact number is not known, please provide best estimate).

1) Marina location: ___NY ___CT

2) Nearest major waterbody: ___Long Island Sound ___New York Harbor/Hudson River
___Atlantic Ocean/Long Island ___Peconic Gardiners Bays/
South Shore Bays Block Island Sound
___Other (Please specify)_____

3) Type of marina: ___Privately owned commercial marina ___Yacht Club
___Government/Publicly owned/operated facility ___Other

4) Do you have an operational pumpout station? ___Yes ___No
If yes, please indicate year of first full season of use: 19__

5) Please estimate the total number of pumpouts performed during the 1993 boating season: ___ Pumpouts

6) Compared to previous years, has the use of your pumpout facility in 1993:
___Increased ___Decreased ___Remained Same ___Don't Know ___Not Applicable

7) Please estimate the total volume of waste pumped out during the last full boating season: ___ Gallons

8) Please estimate the average number of vessels pumped out on a typical high use day: ___ Boats

9) What is the maximum number of vessels you have pumped out in any one day? ___ Boats

10) Total number of boats in marina during typical high use period: ___ Boats
Number greater than 25 feet in length ___ Boats

11) Type of pumpout unit: ___Fixed ___Mobile/Portable ___Other (specify)_____

12) Pumpout construction: ___Homemade ___Commercially-produced

13) Pumpout location: ___Gas Dock ___Dock ___Bulkhead
___Other (specify)_____

14) Disposal of collected boat sewage is by:
___On-site Septic Tank/Cesspool ___Municipal Sewer System Hookup
___On-site Package Plant ___Holding Tank w/Waste Hauler
___Other (please specify)_____

15) Do you use a tank for storage of collected boat waste? ___Yes ___No
If yes, is it: ___Above Ground ___Below Ground
Capacity of storage tank: ___Gallons

16) How much do you charge for a pumpout? Regular Customers $_____ Transients $_____

17) Total cost to purchase/install pumpout system *(including: pipes, tanks, labor etc.)* $ _____ Year installed: 19__

18) Approximate annual costs to marina associated with operating pumpout:
Maintenance $ _____
Operational labor $ _____
Waste Disposal $ _____
Other/(specify) $ _____ _____

THANK YOU

(Please return completed form in the postage-paid envelope provided).

APPENDIX D
Summary of Facility Operator's Survey Response

SEA GRANT MARINA
PUMPOUT USE SURVEY

Summary of Results

(Please check or fill in appropriate response. If exact number is not known, please provide best estimate).

1) Marina location: 32 NY 13 CT

2) Nearest major waterbody:
28 Long Island Sound
9 Atlantic Ocean/Long Island South Shore Bays
0 Other (Please specify)_____
0 New York Harbor/Hudson River
8 Peconic Gardiners Bays/ Block Island Sound

3) Type of marina: 33 Privately owned commercial marina 0 Yacht Club
12 Government/Publicly owned/operated facility 0 Other_____

4) Do you have an operational pumpout station? 39 Yes 5 No
If yes, please indicate year of first full season of use: 1965-94

5) Please estimate the total number of pumpouts performed during the 1993 boating season: $\bar{x}$=120 Pumpouts (n=33)

6) Compared to previous years, has the use of your pumpout facility in 1993:
20 Increased 7 Decreased 11 Remained Same 0 Don't Know 1 Not Applicable

7) Please estimate the total volume of waste pumped out during the last full boating season: $\bar{x}$=1613 Gallons
TOT=51625 (n=32)

8) Please estimate the average number of vessels pumped out on a typical high use day: 5.3 Boats

9) What is the maximum number of vessels you have pumped out in any one day? 7.9 Boats

10) Total number of boats in marina during typical high use period: 164 Boats
Number greater than 25 feet in length 109 Boats

11) Type of pumpout unit: 22 Fixed 19 Mobile/Portable 0 Other (specify)_____

12) Pumpout construction: 12 Homemade 29 Commercially-produced

13) Pumpout location: 10 Gas Dock 11 Dock 11 Bulkhead
8 Other (specify) MOBILE=7 ON BOAT=1

14) Disposal of collected boat sewage is by:
10 On-site Septic Tank/Cesspool 12 Municipal Sewer System Hookup
0 On-site Package Plant 18 Holding Tank w/Waste Hauler
0 Other (please specify)_____

15) Do you use a tank for storage of collected boat waste? 25 Yes 14 No
If yes, is it: 20 Above Ground 5 Below Ground
Capacity of storage tank: $\bar{x}$=566 Gallons (n=21)

16) How much do you charge for a pumpout? Regular Customers $ 9.38 Transients $ 11.19

17) Total cost to purchase/install pumpout system (including: pipes, tanks, labor etc.)$ 6,359 Year installed:1965-94 ($250 - 28,000)

18) Approximate annual costs to marina associated with operating pumpout:

Maintenance	$ $\bar{x}$=421	($0 - 3000)	(n=24)
Operational labor	$ $\bar{x}$=835	($0 - 8000)	(n=20)
Waste Disposal	$ $\bar{x}$=422	($0 - 2500)	(n=20)
Other/(specify)	$ $\bar{x}$= 97	($0 - 900)	(n=17)_____

THANK YOU

(Please return completed form in the postage-paid envelope provided).

APPENDIX E
Boater Survey Form

Sea Grant Extension Program *of the New York Sea Grant Institute*

Cornell University • State University of New York • NOAA

New York Sea Grant
125 Nassau Hall
SUNY at Stony Brook
Stony Brook NY 11794-5002

Phone: (516) 632-8730
Fax: (516) 632-8216

JJT7593

September 20, 1993

Mr. Rossiter
Mr. P.O. Box 1086
Branford, CT 06405

E X A M P L E

Dear Mr. Rossiter:

Our records indicate that you requested and received a copy of *Boat Pumpout Facilities in New York and Connecticut Waters* produced by the New York and Connecticut Sea Grant Programs. We hope this information was helpful.

Sea Grant would like your help in evaluating the usefulness of this material and identifying ways we can improve our programs in this area. Please, take a few moments to fill out the enclosed questionnaire. The responses to this survey, which is being conducted in conjunction with the U.S. Environmental Protection Agency, will be used to gage the effectiveness of the directory and other similar educational programs in addressing the boat sewage issue. (A copy of the directory is enclosed for your convenience.) In addition, the information you supply will be summarized and provided to decisionmakers and others to help them better understand the problems associated with pumpouts and boat waste and identify workable solutions.

Your response is important to the accuracy of the survey. Please return the completed questionnaire in the enclosed postage-paid envelope as soon as possible.

Thank you for your time and input. If you have any questions or want additional information or would like a copy of the survey results when completed, please don't hesitate to contact me at (516) 632-8730.

Sincerely,

Jay Tanski

Jay Tanski
Extension Specialist

JJT/eg
enclosure

SEA GRANT
BOATER SURVEY

(Please check or fill in the appropriate response).

1) Do you own a boat? ___Yes ___No

2) What is your boat's size? ___Less than 25' ___25' to 40'
___Greater than 40'

3) Does your vessel have an installed toilet? ___Yes ___No
If no, do you have a portable toilet? ___Yes ___No

4) Is your toilet equipped with a marine sanitation device (MSD)? ___Yes ___No

5) If yes, what type of MSD is on your boat?
___Type I or II (Flow through treatment)
___Type III (Holding Tank); Tank Capacity? ___Gallons

6) Before receiving the Pumpout Directory did you regularly pumpout your holding tank? ___Yes ___No ___Not Applicable
If yes, approximately how often? ___times/season
If no, why not?_____

7) After receiving the Pumpout Directory did you utilize any of the facilities listed? ___Yes ___No ___Not Applicable
If yes, approximately how often? ___times/season
If no, why not?_____

8) Was the information presented in the Pumpout Directory:
Easily understood? ___Yes ___No
New to you? ___Yes ___No
Useful to you? ___Yes ___No

9) Have you shared this information with other people? ___Yes ___No
If yes, about how many? ___people

10) Can you suggest ways to improve the usefulness of the directory? *(Use additional sheet, if necessary).*
_____
_____

11) Please indicate which two measures do you think would be most effective in reducing recreational boat sewage discharges:
(please pick 2 only) ___Implement new and stricter laws ___Better enforcement of existing laws
___Increase number of facilities ___Lower cost of pumpouts
___Increased boater awareness/education programs
___Other (specify)_____

12) About how many days did you spend boating in 1993? ___days

13) How many nights did you or others sleep on your boat during the 1993 season? ___nights

14) What is your principal boating area? ___Long Island Sound ___New York Harbor/Hudson River
___Atlantic Ocean/Long Island South Shore Bays ___Peconic Gardiners Bays/ Block Island Sound
___Other (Please specify)_____

THANK YOU

(Please return in the postage-paid envelope provided).

SEA GRANT
BOATER SURVEY

Summary of Results

(Please check or fill in the appropriate response).

1) Do you own a boat? 58 Yes 4 No

2) What is your boat's size? 11 Less than 25' 45 25' to 40'
3 Greater than 40'

3) Does your vessel have an installed toilet? 46 Yes 16 No
If no, do you have a portable toilet? 10 Yes 6 No

4) Is your toilet equipped with a marine sanitation device (MSD)? 42 Yes 9 No

5) If yes, what type of MSD is on your boat?
6 Type I or II (Flow through treatment)
38 Type III (Holding Tank); Tank Capacity? $\bar{x}$=19.2 Gallons (n=36)

6) Before receiving the Pumpout Directory did you regularly pumpout your holding tank? 27 Yes 13 No 22 Not Applicable
If yes, approximately how often? $\bar{x}$=5.4 times/season (n=24)
If no, why not? SEE TEXT

7) After receiving the Pumpout Directory did you utilize any of the facilities listed? 21 Yes 10 No 30 Not Applicable
If yes, approximately how often? 5.9 times/season (n=18)
If no, why not? SEE TEXT

8) Was the information presented in the Pumpout Directory:
Easily understood? 57 Yes 1 No
New to you? 41 Yes 11 No
Useful to you? 49 Yes 2 No

9) Have you shared this information with other people? 41 Yes 18 No
If yes, about how many? $\bar{x}$=28 people (n=20)

10) Can you suggest ways to improve the usefulness of the directory? *(Use additional sheet, if necessary).*
SEE ATTACHED

11) Please indicate which two measures do you think would be most effective in reducing recreational boat sewage discharges:
(please pick 2 only) 7 Implement new and stricter laws 15 Better enforcement of existing laws
32 Increase number of facilities 32 Lower cost of pumpouts
25 Increased boater awareness/education programs
3 Other (specify)

12) About how many days did you spend boating in 1993? $\bar{x}$=41 days (n=57)

13) How many nights did you or others sleep on your boat during the 1993 season? 16 nights (n=56)

14) What is your principal boating area? 38 Long Island Sound 1 New York Harbor/Hudson River
13 Atlantic Ocean/Long Island South Shore Bays 8 Peconic Gardiners Bays/ Block Island Sound
0 Other (Please specify)

THANK YOU

(Please return in the postage-paid envelope provided).

Individual Responses to Question #9 Regarding Ways to Improve the Directory

- More info about location of pumpout in each marina.
- Label map.
- Contact persons at the telephone numbers should have detailed info re: exact location of pumpouts.
- The directory itself is fine. A wider distribution/awareness might help.
- Distribute to marinas and possibly with boat registration.
- Pumpout facilities #69, County Suffolk operated. No personnel to turn on pumpout station?
- Provide it to all boat dealers to include in literature at sales. Encourage dealers to instruct purchasers in procedure and demonstrate. Maybe people could be rewarded for participating - i.e., they have a card stamped each time they pump out, and with each number of pumpouts they get a nautical type gift.
- Encourage employees at facilities with pumpout stations to inquire of individuals "Would you like your marine holding tank pumped out? It's free you know, and you'll catch more fish if it doesn't go into the Sound."
- Help older marinas, gas docks, etc. to install pumpout facilities - tax break is a great incentive.
- Add names in NYC.
- Show how to use the facility, make user friendly.
- Directory should be updated. For example Station 109 is not in existence. Pumpout station is located at Guy Lombardo Marina in Freeport. Also, pumpout stations should be properly maintained. Last summer on the same day stations 106 and 107 were both inoperable.
- Boat owners should be sent pumpout instructions with vehicle registration and renewal.
- Each listing should indicate whether or not portable toilet emptying is possible and/or allowed.
- Is there facilities to dump out a portable toilet?
- Make the directory available as a free handout at all marinas (whether or not they have pumpouts), dealerships, marine supply stores etc.
- Distribute at boat shows, chandleries, yacht clubs, marinas.
- Can't locate some.

- Your Pumpout Directory is a blessing to all boaters cruising the waters covered within it and who are not aware of the names and locations of the various stations listed.
- I think it could be even more useful if it had covered those stations located along the Hudson River from New York Harbor to the Troy Locks in Albany. I believe there are about 22 such stations.
- I also note that there is a wide discrepancy in the costs for pumpout service. Boaters may want to know why. Municipal marinas apparently offer free service.
- Those marinas offering such service would seem to attract more boaters' interest and use. Therefore, it might be a good idea to set such facilities in BOLD TYPE in your next Directory.

- I have drawn information from your Directory to include in the revised 1994 edition of my **Cruising Guide to the New England Coast, Long Island and the Hudson River**. I wish to thank your program for such a valuable contribution.

- Send booklets to yacht clubs.

- Does dollar figure reflect cost of pumpout? #15 River Landing $60? Bayles Dock is $15. (not listed).

- Make sure all pumping stations are not blocked by police or Coast Guard.

- Update information. Include a few town names on map to make location easier.

- The depth of the water at low tide.

- Include depth at MLW (mean low water).