

NO DISCHARGE ZONES IN MARYLAND'S WATERS

A White Paper Prepared By:

Donald O'Neill

Maryland Clean Vessel Act Coordinator

Department of Natural Resources circa 1992 – 2004

Donna Morrow

Maryland Clean Marina Initiative

1998 – Present

First Prepared: January 3, 2007

Statistical and Legislative Updates: September 2014

TABLE OF CONTENTS

Executive Summary	3
I. Legal History	5
A. Existing Laws Governing Boat Discharge	5
B. No Discharge Zone Definition and Designation Requirements	5
C. Maryland's Boat Sewage Initiative Background/Origins	6
D. Chronology of Relevant Maryland Statutes & C2K Objectives	7
II. Expanded Background	8
A. Clean Marina Initiative – Background/Origins	8
B. Advantages/Disadvantages of Type I MSDs	9
III. Environmental Concerns	11
A. Boat Sewage Impacts to Maryland's Waters	11
B. Comparative Significance of Boat Sewage	11
IV. History of NDZs in Maryland	12
A. Natural Resources Article §8-742	12
B. Chesapeake 2000 – C2K	13
C. Herring Bay and Northern Coastal Bays NDZs	14
V. Future of NDZs in Maryland	16
A. Funding Issues	16
B. Enforcement Issues	17
C. Possible Options for the Future	18

Executive Summary

It is illegal for a vessel operating within three miles of the U.S. coast to discharge raw sewage into the water. A No Discharge Zone (NDZ) is an area of water where it is also illegal to discharge sewage that has been treated by a certified Type I or Type II Marine Sanitation Device (MSD). Type I MSDs are more common than Type II MSDs (and are discussed in this paper) because Type II systems are generally used only on vessels over 65' in length. A Type III MSD is generally a holding tank and may be on any size vessel.

NDZs are designated by the Environmental Protection Agency (EPA) upon application of an individual state. There are three different sections of the Clean Water Act (CWA) under which states may submit for NDZ designation. The most common way requires, amongst other things, that there be sufficient marine sewage pumpout facilities in the area. This is how Maryland's two NDZ's, Herring Bay and the northern Coastal Bays, were approved.

In 2007, a total of 452 pumpouts (which empty raw sewage from vessel holding tanks and portable toilets) are currently located at 368 marinas throughout the state. Maryland has more pumpouts than any other state. This remains relatively unchanged in 2014. Most of these marinas received a 100% grant from DNR using a combination of federal Clean Vessel Act (CVA) funds (75%) and state Waterway Improvement Fund (WIF) funds (25%). Similarly, the two staff persons who administer the Pumpout Program are CVA/WIF funded.

A major challenge for any future NDZs is that CVA funds (including staff salaries) may NOT be used for NDZ initiatives (which can be very time-consuming). Some other, as yet unknown, source of funding would have to be utilized.

NDZs can also be controversial because the same boating interest and marine trades groups that have supported Maryland's CVA program are frequently opposed to NDZs. Enforcement of NDZ requirements is problematic so voluntary compliance is very important.

According to a survey conducted in 2000 by the Schaefer Center for Public Policy, of the 200,000+ vessels registered in Maryland, approximately 41,000 have some type of onboard toilet. The vast majority of these (88%) either have a Type III MSD, a portable toilet, or a combination (Type I/Type III) system. The survey goes on to say that 81% of the vessels that are able to use pumpouts actually use them; the vast majority of these vessels doing so several times during the boating season. These numbers demonstrate that most of the sewage generated by recreational vessels is disposed of at pumpouts. Staff estimates that approximately two million gallons of raw sewage is properly disposed of at Maryland's pumpouts each year.

Only about 2,000 vessels statewide rely solely on Type I MSDs. These systems can operate very well and, for a variety of reasons, these systems can operate very poorly. Either way, use of these systems may be a particular concern in local "sensitive" areas of water.

Looking to the future, possible options include:

(1) Circulate this report for review and comments.

Over the years, State Senator Brian Frosh has been particularly interested in the NDZ issue and had recently considered introducing legislation that would have required the whole Maryland portion of the Chesapeake Bay to be an NDZ. The Senator would, therefore, likely be very interested in reviewing this report.

Several boating interest, marine trades, and environmental groups have also had an interest in NDZs and have often staked out positions one way or the other. This report attempts to be non-biased so these groups may benefit from seeing opposing viewpoints. At the same time, these groups can act as a “fact check” for this report and DNR would very much benefit from corrections and other comments these groups have to offer.

(2) Reconnect with the Tributary Strategies Teams to share information and explore opportunities.

An NDZ stands a much greater chance of success if it is a locally driven initiative as opposed to a requirement that is imposed from “on high.” The Tributary Strategies Teams are uniquely positioned to be a link between staff and local groups/organizations that may have an interest in NDZs. This link was established several years ago but, over time, has been lost. It would likely be helpful to reconnect with those teams.

(3) Explore NDZ Opportunities Under CWA §312(f)(4)(A)

The most common way to apply for an NDZ is under CWA §312(f)(3) and it was under this section that the Herring Bay and northern Coastal Bays NDZs were approved. Under this section, the state must demonstrate that an area of water has sufficient pumpout facilities.

An NDZ may also be declared under CWA §312(f)(4)(A) if the EPA Administrator determines, upon application by a state, that the protection and enhancement of the quality of specified waters within the state require the prohibition. This section does not require that the state demonstrate a sufficient number of pumpouts. With that in mind, the EPA was asked if the Corsica River, a “Targeted Watershed” would qualify for NDZ designation even though it has no pumpouts. This question is currently under consideration by the EPA and the answer could impact future NDZs in targeted and other watersheds. 2014 Update: The request was denied by EPA.

(4) Conduct outreach that targets the users of Type I MSDs.

Over the years, staff has conducted extensive outreach encouraging boaters to install and use holding tanks. This outreach has been successful and, as noted above, only a relatively small minority of boaters use Type I MSDs. One option, therefore, would be to continue to encourage boaters to install and use holding tanks but acknowledge that some boaters will simply prefer to use a Type I MSD. The outreach would educate boaters that choose Type I MSDs on ways to use these systems as responsibly as possible.

I. LEGAL HISTORY

A. Existing Laws Governing Boat Discharge.

It is illegal for a vessel to discharge raw sewage within U.S. territorial waters (the three-mile limit) including all of Maryland's waters. There is no requirement that a recreational vessel have a toilet, however, if it has an installed toilet, it must meet the requirements detailed in the U.S. Coast Guard MSD Regulations (33 CFR Part 159 Subpart A) which are enforced by the U.S. Coast Guard. Maryland law (Natural Resources Article §8-741) is patterned after the federal requirements and allows enforcement of these requirements by the Natural Resources Police (NRP).

Under Maryland law, if a vessel has an installed toilet, it must be equipped with a Type I, Type II, or Type III MSD. Type I and Type II MSDs are systems that treat the sewage to set standards before discharge into the water. These systems must display a certification label demonstrating that the systems meet federal standards. Type III MSDs are generally holding tanks but may include recirculating/incinerating systems. Vessels 65 feet and under must be equipped with a Type I, II, or III MSD. Vessels 65 feet and over must have a Type II or Type III MSD. Type III MSDs (which may be used on any size vessel) require no certification label. Vessels may also be equipped with "Y valves" which bypass holding tanks and allow raw sewage to be discharged into the water (designed for off-shore needs), however, these valves must be secured when operating within Maryland waters. Similarly, holding tanks may be equipped with pathways that allow the overboard discharge of raw sewage, however, these pathways must be blocked or secured when operating within Maryland waters. Finally, any vessel offered as a non-captained charter must be in compliance with the above requirements and the lease agreement must include a paragraph outlining the operator's responsibilities under Maryland's MSD law.

The federal standard for a Type I MSD is that the treated discharge must not have a fecal coliform bacterial count greater than 1,000 per 100 milliliters at point of discharge. In addition, the effluent cannot contain any visible floating solids. The federal standard for a Type II MSD is a fecal coliform count of 200 per 100 milliliters at point of discharge and the Type II must remove suspended solids to 150 milligrams per liter or less at point of discharge.

B. No Discharge Zone Definition and Designation Requirements

A no discharge zone (NDZ) is an area of water where the discharge of all vessel sewage (both treated and untreated) is illegal. When operating in an NDZ, boaters must secure their Type I and Type II MSDs (i.e., by locking the door to the head). NDZs are declared by the Environmental Protection Agency (EPA) under provisions of §312 of the Clean Water Act (CWA). In coastal waters, this is most commonly done by the states submitting applications under CWA §312(f)(3). There are seven application and information requirements given in 40CFR §140.4(a) of the regulation. The information required includes:

- (1) A certification that the protection and enhancement of the waters described in the petition require greater environmental protection than the applicable Federal standard;
- (2) A map showing the location of commercial and recreational pumpout facilities;
- (3) A description of the location of pumpout facilities within waters designated for no discharge;
- (4) The general schedule of operating hours of the pumpout facilities;
- (5) The draught requirements on vessels that may be excluded because of insufficient water depth adjacent to the facility;
- (6) Information indicating that treatment of wastes from such pumpout facilities is in conformance with Federal law; and
- (7) Information on vessel population and vessel usage of the subject waters.

Although less commonly used, the EPA has authority under CWA §312(f)(4)(A) to designate an NDZ if the Administrator determines, upon application of a state, that the protection and enhancement of the quality of specified waters within the state require the prohibition. Staff is unaware of any published criteria on how to apply for an NDZ under this section and is currently seeking guidance from the EPA. A similar NDZ prohibition may be made under CWA §312(f)(4)(B) for drinking water intake zones.

C. Maryland's Boat Sewage Initiative Background/Origins

Marine sewage pumpout facilities are used to empty and properly dispose of raw sewage from vessel holding tanks and portable toilets. In late 1989, Maryland began using state Waterway Improvement Fund (WIF) funds to implement the first marine sewage pumpout grant program in the nation. Under this program, public and private marinas receive a 100% reimbursement for the purchase and installation of pumpouts. At the time, only about 30 of Maryland's approximately 600 marinas had pumpouts. Most these units were in very poor condition and boaters were charged up to \$25.00 to pumpout. Because pumping out was so problematic, very few boats had/used holding tanks.

Maryland's pumpout grant program later became the model for the federal Clean Vessel Act of 1992 (CVA) program. The national CVA program is administered by the U.S. Fish and Wildlife Service (FWS) and, under CVA, states compete to receive federal grants that support up to 75% of the cost of boat sewage initiatives.

With the availability of this additional funding source, Maryland began using CVA/WIF funds for pumpout installation, pumpout operations and maintenance, and pumpout outreach projects which include encouraging boaters to install and use holding tanks. Maryland now has 452 pumpouts located at 368 marinas (many marinas have more than one pumpout). There are more pumpouts in Maryland than any other state. Additionally, the vast majority of Maryland's vessels with toilets are now using pumpouts instead of dumping into the water. It is estimated that, each year, approximately two million gallons of raw sewage is properly disposed of at Maryland's pumpouts.

Maryland's CVA program is the recipient of the States Organization for Boating Access Program Excellence Award as well as a Certificate of Appreciation from the Chesapeake

Bay Yacht Clubs Association. The CVA Coordinator is also the recipient of the Marine Trades Association of Maryland (MTAM) Outstanding Service Award.

A major factor in the success of the Maryland's pumpout program is that the program has enjoyed widespread support from boating interest and marine trades groups including Boat/US Clean Water Trust, the MTAM, the American Boat and Yacht Council (ABYC), and the Chesapeake Bay Yacht Clubs Association.

D. Chronology of Relevant Maryland Statutes & C2K Objectives

- 1987 – The Chesapeake Bay Agreement includes an objective to, “Eliminate pollutant discharges from recreational boats.”
- 1988 – State Boat Act (Natural Resources Article §8-707) amended to allow the use of WIF funds for the construction and maintenance of pumpout facilities.
- 1989 – Environment Article §9-333 requires new/expanding marinas with more than ten slips to have a pumpout. A “two-mile exception” is allowed if another pumpout is nearby.
- 1989 – The Board of Public Works undertakes an administrative procedure that may require a pumpout as a condition of marina's wetlands license (i.e., for dredging).
- 1994 – Environment Article §9-333 is amended to include a pumpout requirement for marinas with 50 or more slips. The two-mile exception is removed from the law.
- 1994 – Natural Resources Article §8-741 requires vessels with installed toilets to comply with federal marine sanitation device (MSD) requirements. The law has a delayed effective date of July 1, 1997 to allow DNR to conduct boater outreach.
- 1999 – Natural Resources Article §8-742 requires DNR to identify areas of water that are sensitive to the discharge of boat sewage and to conduct pumpout/MSD-related surveys.
- 2000 – *Chesapeake 2000 (C2K)*, the reauthorized Chesapeake Bay Agreement, is signed. Boat sewage related objectives were to:
 - By 2003, establish appropriate areas within the Chesapeake Bay and its tributaries as “no discharge zones” for human waste. By 2010, expand by 50% the number and availability of waste pumpout facilities.
 - By 2006, reassess our progress in reducing the impact of boat waste on the Bay and its tributaries. This assessment will include evaluating the benefits of further expanding no discharge zones, as well as increasing the number of pumpout facilities.

II. EXPANDED BACKGROUND

A. Clean Marina Initiative – Background/Origins

Maryland's Pumpout Program and Clean Marina Initiative (CMI) are two separate programs at DNR with different staff and different objectives, however, both programs rely heavily upon support from the marine trades and boating communities. Without their support, neither program would be successful. Since these same organizations do not necessarily support NDZs, any discussion of NDZs in Maryland's waters needs to include some discussion of CMI.

CMI is a voluntary, awards-based program designed to reduce non-point source pollution from marinas and recreational boaters. CMI provides technical and (when possible) financial assistance to marinas to reduce pollution from activities such as fueling, boat repair, and stormwater run-off.

CMI was developed in response to the Coastal Zone Act Re-authorization Amendments of 1990 §6217 which mandated that Maryland address non-point source pollution from marinas and recreational boaters (among four other industries). CMI was developed in 1997 with the goal of certifying at least 25 percent of Maryland's estimated 600 marinas as "Maryland Clean Marinas." Certification indicates facilities have adopted a significant portion of the recommendations in the Maryland Clean Marina Guidebook, have been inspected by program staff, and are in compliance with applicable environmental regulations. As of September 2014, 157 marine facilities have been certified as Maryland Clean Marinas or Clean Marina Partners (smaller facilities without service or full staff). This represents 25 percent of the boating facilities in Maryland.

Maryland's CMI is viewed as one of the most innovative and successful programs of its kind in the nation and has served as the model for several similar programs around the country. As noted above, a major factor in this success is that, from the inception of the program, DNR partnered with the same marine trades and boating industry groups that have made the Pumpout Program successful (i.e., MTAM and Boat/US Clean Water Trust). For example, these groups were members of a "Clean Marina Committee" that helped DNR develop the CMI including establishing award criteria that were reasonable, attainable, and meaningful.

These groups continue to support the CMI by participating in annual workshops and awards ceremonies to publicize the program. Members of MTAM, Boat/US, and several marina operators, which comprise the Clean Marina Committee, also provide technical assistance and professional opinions to guide and shape the CMI as it continues to evolve.

B. Advantages/Disadvantages of Type I MSDs

The advantages and disadvantages of Type I and Type II MSDs are similar, however, the focus is on Type I MSDs because they are more commonly used than Type II systems.

Advantages

The federal MSD standards, highlighted on page 5, are over thirty years old. There are Type I MSDs currently on the market that advertise that they reduce the bacterial count in raw sewage to virtually zero, eliminate floating solids, and accomplish this without discharging toxic chemicals into the water.

Type I MSDs give boaters the flexibility of being able to use their toilets in areas of water that are underserved by pumpout facilities as well as when their boats will be away from all marinas (and all pumpouts) for extended periods of time. For example, although many boaters engage in short day trips (returning to the same marina at the end of the day), many others engage in overnight, transient, or even interstate travel. In cases where pumpouts are not available (i.e., not nearby, broken, or closed for the winter), it may be more practical to have a system that legally treats and discharges waste as opposed to having a full holding tank with no nearby pumpout facility to empty it. Opponents of large scale NDZs argue that, in those circumstances, it is better for boaters to treat and discharge the waste than to have boaters' holding tanks become full and then be tempted to dump it untreated into the water.

Available vessel space and the amount of use the vessel receives must be considered when selecting an MSD. Vessels that are heavily used need sufficient capacity to hold or treat sewage. A larger holding tank obviously requires more space which, while not a problem on large vessels, may be a challenge on a medium or small vessel. In cases where there is insufficient space to install an adequate size holding tank, a Type I MSD may be the more viable alternative.

Finally, although a properly installed and maintained holding tank should not smell or leak, just the perception of dealing with raw sewage at all may be enough to steer some boaters towards the use of Type I MSDs. Significant outreach has addressed the problem of improperly installed and maintained holding tanks but some people may still be uncomfortable with holding and transporting raw sewage.

Disadvantages

Properly operating Type I MSDs will significantly reduce the bacteria in boat waste and will eliminate floating solids. The use of these systems may, however, be problematic because of concerns about how: (1) these systems do little to reduce the amount of nutrients in boat sewage, (2) the federal standard for Type I MSD certification allows for the discharge of unacceptable levels of bacteria and does not prohibit the use of toxic chemicals, and (3) there is no mechanism in place that ensures that these systems, once installed, are properly maintained and continue to operate properly over time.

Nutrient overenrichment is the biggest threat to the health of the Chesapeake Bay and Type I MSDs do little to reduce the amount of nutrients contained in boat sewage. For this reason, discharges from Type I MSDs can be a problem in sensitive areas of water that are already impacted by other sources of nutrients including poorly flushing areas and areas where vessels tend to congregate.

As noted on page 5, the federal standard for a Type I MSD is that the treated discharge must not have a fecal coliform bacterial count of greater than 1,000 per 100 milliliters at point of discharge. In addition, the effluent cannot contain any visible floating solids. To put that federal standard in perspective, in Maryland, a median bacterial count of 14 per 100 ml could result in a shellfish bed being closed. A geometric mean bacterial count of 200 per 100 ml could result in a beach closure.

The federal standard also does not prohibit the use of toxic chemicals in the treatment process such as chlorine, zinc, quaternary ammonium, formaldehyde and dimethylaminoethylene dichloride. All of these chemicals are harmful to marine and estuarine life and may legally be used, and have been used, as part of the sewage treatment process on boats and then discharged into the water along with the human waste.

As noted above, the above federal standard is old (1975) and, some manufacturers have made great strides in improving Type I technology. On the other hand, one company or some companies using advanced technology does not prevent less advanced systems from being purchased and used.

Over the past several years, Representative Jim Saxton, from New Jersey, attempted to address the issue of national MSD standards through the “Recreational Waters Protection Act” which would have created a Type IA MSD that better reflected the industry standards that are now available. A more controversial provision of the bill would have, however, allowed Type IA MSDs to be used in NDZs. This bill was introduced in Congress at least twice but never passed.

Although the technology for Type I MSDs has improved, there is no mechanism in place that ensures that a certified Type I MSD, once installed, will be properly maintained and will continue to work as advertised. For example, a car’s exhaust system, which certainly meets federal emissions standards at the time of manufacture, is required to be inspected periodically. There is no similar inspection requirement for a boat’s Type I MSD.

As an example of this concern, a Type I MSD could have been installed on a boat twenty years ago and, this entire time, has been using a toxic chemical to treat the sewage before discharge. Over the years, that MSD may have had minimal maintenance which may mean that the vessel is now discharging very poorly treated sewage in addition to a toxic chemical. In the meantime, the vessel could have been sold any number of times to various owners who have no idea what a Type I MSD is, much less how to maintain it. As one new owner of a used boat put it, “All I know is that I add some blue stuff and flush.”

III. ENVIRONMENTAL CONCERNS

A. Boat Sewage Impacts to Maryland’s Waters

The biggest threat to the health of the Chesapeake Bay is nutrient overenrichment. Boat sewage, whether treated or not, contains nutrients. Untreated, or improperly treated, boat sewage also contains disease-causing microorganisms (pathogens), such as bacteria, protozoans, and viruses which can cause illness to swimmers and can contaminate

shellfish beds also causing illness. Treated boat sewage may also contain toxic chemicals that can harm marine life.

B. Comparative Significance of Boat Sewage

From a bay-wide perspective, boat sewage is a relatively minor source of pollution. At the same time, the Chesapeake Bay and its tributaries are an integrated ecosystem and all sources of pollution, whether relatively major or relatively minor, impact the health of the Bay. For this reason, all sources of pollution, including sewage discharges from recreational boats, need to be addressed.

From a local perspective, the impact of boat sewage can be more significant. Of particular concern are environmentally sensitive areas where boats tend to congregate, where water contact activities occur (i.e., swimming), and that have living resources (i.e., shellfish beds). Marinas/rafting areas tend to be located in these sensitive areas which may not flush well and which are likely already impacted by other sources of pollution.

Nutrients

From a bay-wide perspective and when compared to other sources of pollution, the amount of nutrients entering the water from boat sewage is miniscule. In the mid 1990's, the Pumpout Program ran some "worst case" numbers that assumed that no boat sewage was being properly disposed of at Maryland pumpouts and that each vessel capable of discharging waste was dumping about ten gallons of sewage in the water per boating day. Even under that scenario, the amount of nutrients entering the water from boat sewage was extremely small when compared to other sources of nutrient pollution. **2014:** In response to a 2010 bill proposing a bay-wide NDZ, staff researched nutrient impact bay wide from Type I and II marine sanitation devices (MSDs). They concluded that discharge from these units equates to **0.0017 percent** of the total nutrient load bay-wide.

As opposed to a "worst case" situation where no boaters are using pumpouts, as noted in a 2000 survey summarized on page 13, the vast majority of boaters with on-board toilets are now using pumpouts and are properly disposing of approximately two million gallons of sewage per year. Only a relatively small minority of boats discharge sewage into the water, either treated or raw. From a bay-wide perspective, therefore, nutrient overenrichment from boat sewage is a relatively minor concern that has largely been addressed.

Nutrients contained in boat sewage can have a more significant impact on local water quality particularly in areas of water that do not flush well and where boats tend to congregate. Although one discharge from one boat may not add a significant amount of nutrients to the water, the effects of nutrient overenrichment are cumulative so areas of vessel congregation can be a concern. This is a particular problem in environmentally sensitive areas of water that contain living resources and that may not flush well.

Intestinal Microorganisms

The microorganisms contained in raw or poorly treated sewage can have a significant impact on local water quality. A noteworthy example of this was reported in the

February 8, 1995 Journal of the American Medical Association after it was determined that dozens of people had become ill with Norwalk virus after eating oysters that had been harvested in the Gulf of Mexico. It is interesting to note that cooking the oysters did not always render the oysters non-infectious. The investigation was able to trace the source of the contamination to overboard discharge of raw sewage from one oyster boat.

Toxic Chemicals

As previously noted, the process used by Type I and Type II MSDs may include the use of harmful toxic chemicals which are then discharged into the water along with the treated waste. These chemicals can be harmful to marine life.

IV. HISTORY OF NDZs IN MARYLAND

A. Natural Resources Article §8-742

In 1999, Natural Resources Article §8-742 became law and required DNR to identify areas of water that were sensitive to the discharge of boat sewage and to conduct pumpout/MSD related surveys. A Sensitive Areas Committee was formed to assist in this effort. This committee was comprised of representatives from a variety of boating interest, marine trades, and environmental groups in addition to state and federal agencies. Ultimately, DNR identified 33 areas of water totaling 95,199 acres that met the basic criteria for establishing NDZs in the Chesapeake Bay. An additional 277,225 acres were identified as meeting the basic NDZ criteria except for having adequate pumpout facilities.

DNR also contracted with the Schaefer Center for Public Policy to identify the number of recreational vessels in Maryland waters (including transients) that have Type I, Type II, or Type III MSDs or portable toilets. This was done through a boater survey done during early 2000. A good estimate of the number of transient vessels was not determined. It was, however, determined that there would likely be no appreciable differences between the distribution of MSDs on boats registered in Maryland and those registered in other states.

The results of the MSD survey are summarized below:

Number of vessels registered in Maryland	200,000+
Number of vessels capable of having a toilet	41,480

Type of MSD/toilet

None	5%
Type I MSD	5%
Type II MSD	0.2%
Type III MSD	52%
Combination (Type I/Type III)	6%
Portable Toilet	30%
Don't know	0.5%
Other	0.4%

These numbers show that only about 1/5 (41,480) of the vessels registered in the state have the potential to discharge waste into the water. Of those, 88% are able to use pumpouts (including Type III MSDs, portable toilets, and combination systems). The survey goes on to indicate that 81% of the vessels that are able to use pumpouts actually use them; the vast majority of these vessels doing so several times during the boating season. It was also believed that the boaters that do not use pumpouts are likely to have portable toilets that many said are either emptied at home or at a portable toilet dump stations.

The bottom line is that, by far, most of the sewage generated by vessels registered in Maryland is being disposed of at pumpout facilities instead of being dumped into the water. Throughout the state, only about 2,000 vessels rely solely on a Type I MSD and about 2,000 vessels have no MSD. Although no follow-up vessel surveys have occurred, the number and availability of pumpouts has grown significantly in the seven years since the survey was conducted.

B. Chesapeake Bay Agreement 2000 – “C2K”

As previously noted, two NDZ-related objectives of C2K were: (1) to establish appropriate areas of water as NDZs by 2003 and, (2) by 2006 evaluate the benefits of further expanding NDZs. Herring Bay was designated an NDZ in 2001 and this paper should help in evaluating the benefits of further expanding NDZs.

C. Herring Bay and Northern Coastal Bays NDZs

Herring Bay

Implementing NDZs in Maryland’s waters has been “on the table” since the pumpout program first began. The first serious discussion of having a particular area designated as an NDZ occurred in 1997 when the Lower Western Shore (LWS) Tributary Strategies Team proposed having Herring Bay, in Southern Anne Arundel County, declared an NDZ.

Around the time that the LWS Team made its proposal, DNR was in the process of planning to host a U.S. Fish and Wildlife Service (FWS) Region 5 CVA Coordinator’s meeting, which would be bringing together CVA coordinators from Virginia to Maine as well as officials from the FWS. It was decided to include a panel discussion on NDZs at that meeting so that there could be a healthy exchange of ideas.

The panel included representatives from a number of states already having NDZs (Rhode Island, Massachusetts, and California), an official from the EPA, and the member of the LWS team that was most interested in having Herring Bay declared an NDZ. The audience included a wide variety of boating interest, marine trades, and environmental groups, as well as the CVA coordinators from the northeast states. This discussion was often contentious and demonstrated a basic disconnect:

-The LWS Trib. Team viewed NDZs as the next logical step in the evolution of the pumpout program. From the team’s perspective, although boat sewage, in

general, is not a “major” source of pollution, Herring Bay contains several environmentally sensitive resources and is home to several large marinas and a significant number of boats. For this reason, the impact of sewage discharges may be more significant. NDZs were also seen as an opportunity for boaters to demonstrate that they were “taking the high road” by doing their share in the effort to clean up the bay. That way, additional attention could be focused on the more serious polluters. Environmental groups shared this view and fully supported the idea of an NDZ in Herring Bay.

-Although they had long been supporters of the pumpout program (and in some cases, active partners), boating/industry groups argued that NDZs were not necessary and could actually be worse for the environment than properly treating and then discharging the sewage. They were also concerned that boaters were an “easy target” for additional regulations while “major” polluters, such as agriculture, were undertaking only voluntary efforts. They also saw little point in implementing additional regulations when current requirements were not being enforced. Finally, although it was not specifically articulated, these groups were likely concerned that if Herring Bay “fell” then the whole Chesapeake Bay might ultimately become an NDZ.

DNR listened carefully to both arguments and saw some merit to both. It was very clear that all of the participants in this discussion loved the Chesapeake Bay and were presenting logical arguments in support of their position. They simply had completely opposite positions on this one issue. From DNR’s perspective, strong local support would be needed for any NDZ to be successful (enforcement is problematic at best) and, at least in 1997, that support was not demonstrated.

By 2000/2001, the LWS Team revisited the idea of having an NDZ for Herring Bay. By that time, the team had implemented the Herring Bay Clean Watershed Initiative which addressed several sources of pollution to Herring Bay. Accomplishments either directly or indirectly attributable to that initiative included connecting the vast majority of homes along the shoreline (which had failing septic systems) to public sewerage, closing a private sewage treatment plant, encouraging farmers to better manage runoff, and increasing public awareness through several beach clean-ups, surveys, and “wade ins.” By that time, nine pumpout facilities were in the area and three marinas had become certified Clean Marinas.

The LWS team also took an active leadership role in “selling” or “championing” the NDZ to local marinas/boaters by conducting outreach and doing vessel/marina surveys. This grass roots effort paid off and, by 2001, 14 of 16 marinas in the area indicated that they had a NDZ policy for slipholders and all 16 marinas indicated they supported the NDZ. Given that level of local support and commitment, DNR worked with the Maryland Department of the Environment (MDE) towards submitting an NDZ application. As part of that process, MDE held a public meeting and there was no opposition from any individual or group. The NDZ application was submitted to the EPA in August 2001, the information was published in the Federal Register, and, again, there was no opposition. Ultimately, the EPA approved the application and Herring Bay became the first NDZ in the Maryland portion of the Chesapeake Bay.

The Northern Coastal Bays NDZ

Also in 2000/2001, the Maryland Coastal Bays Program (CBP) worked with DNR/MDE in order to obtain an NDZ for the northern Coastal Bays. The Maryland Coastal Bays Program had worked with citizens and local officials to develop a Comprehensive Conservation and Management Plan which established specific goals for the Coastal Bays of which boat discharge was but one of many. As with the successful Herring Bay application, the CBP targeted all sources of pollution and that organization took the lead in generating local support, conducting surveys, etc. As with Herring Bay, a public meeting was held and the NDZ application information was published in the Federal Register. This area was also approved unopposed.

Recently staff contacted Dave Blazer, the Executive Director of CBP, and asked his comments about how successful or unsuccessful the NDZ has been over the past five years. Mr. Blazer indicated that he cannot document any improvement in water quality resulting from the NDZ, however, intuitively, the NDZ is likely helping. He advised that the strength of the NDZ is with public relations/outreach in that he can demonstrate that everyone is participating in the cleanup effort. For example, if CBP is speaking with a group of farmers, they can explain how boaters are also doing their share. Finally, he advised that there has been no enforcement of the NDZ.

D. Bay Wide NDZ Proposed HB1257/SB 513 (added September 2014)

During the 2010 legislative session, Attorney General Doug Gansler offered a bill that would establish an NDZ for all Maryland waters of the Chesapeake Bay. It was defeated in committee. Although DNR and Marine Trades Association of Maryland officially supported the bill, they still had major concerns. Top among these were: how large commercial boats would be able to comply; difficulty of enforcement; and the miniscule affect a bay wide NDZ would have on nutrient reduction. Research by DNR and MD Department of the Environment staff concluded that the total nutrients generated from boats with Type I and II MSDs equates to **0.0017 percent** of the total nutrient load bay-wide. In short, it was too big a solution for too small a problem.

V. FUTURE OF NDZs IN MARYLAND

Both Herring Bay and the northern Coastal Bays examples demonstrate that it is possible to implement NDZs in Maryland's waters while minimizing opposition. In addition to meeting the basic EPA requirements for NDZ designation, key factors in that success were:

- (1) Both NDZs were for smaller/localized areas of water,
- (2) Both areas of water had local "champions" that both initiated the NDZ process and were willing to take the time and effort to both generate local support and to overcome any opposition. This is opposed to DNR selecting an area and then trying to convince locals it is a good idea.
- (3) Both areas of water were the subject of comprehensive efforts to clean up all sources of pollution, of which boat sewage was just one factor. Boaters did not feel they were being unfairly targeted.

Prior to DNR becoming involved in any future NDZ initiatives (whether locally generated or not), certain issues need to be considered:

A. Funding Issues

It is very important to note that Clean Vessel Act (CVA) and NDZ are two different federal initiatives administered by two different federal agencies. CVA is administered by Fish and Wildlife Service (FWS) and NDZ is administered by the Environmental Protection Agency (EPA). For this reason, no NDZ expenses may be billed to the CVA program. Although CVA funding was used in 2000-2001 for staff time to support the Herring Bay and northern Coastal Bays NDZ, this is not something that can be repeated.

Maryland's Pumpout Program is funded through the CVA program. Since nothing related to NDZ may be billed to CVA, then some other source of funding, which is not budgeted at this time, would have to be used before any NDZ related expense could be incurred. At this point, staff is unaware of any other possible source of funding that could be used for this purpose.

Some of the expenses typically associated with the implementation of a localized NDZ include; marking buoys - \$231 each, NDZ signs for each marina in the area - <\$100 each, and informational brochures - ~\$1,000. By far the most significant expense, however, is staff salaries.

The process to designate Herring Bay and the northern Coastal Bays as NDZs took a significant amount of the time of both members of the pumpout staff for about one year (both of these individuals are funded by CVA). A significant amount of additional time was spent by the division director overseeing these efforts and a limited amount of time was spent by two individuals preparing brochures, maps, and signs. These two positions have now been lost.

B. Enforcement Issues

Enforcement of the requirements of an NDZ is a major challenge. On a federal level, the U.S. Coast Guard (USCG) has the authority to enforce all applicable federal laws and regulations, including enforcement of NDZs. A boater cited for an NDZ violation is subject to a federal civil penalty not to exceed \$2,000 for each violation. In 2000/2001, the USCG was involved in discussions regarding enforcement of any NDZs and, at that time, agreed to only a very limited enforcement role. After the terrorist attacks of 9/11/01, USCG priorities changed so that the very limited role was even further diminished.

In Maryland, enforcement of NDZs is the responsibility of MDE (Code of Maryland Regulations, Title 26.08.03.01). MDE has the authority to take administrative actions with fines not to exceed \$1,000 per violation. As a practical matter, MDE does not have the resources (including boats) to implement any significant proactive/reactive enforcement activity. For example, if a complaint is received about a boat discharging out on the water within an NDZ, MDE must respond by car to the area and "catch a ride"

on a Natural Resources Police (NRP) vessel. By that time, a transient vessel may be long gone.

Although NRP has the authority to enforce provisions of the Natural Resources Article (including MSD requirements), NRP does not have the authority enforce NDZ requirements. Additionally, absent probable cause or consent, NRP officers have no authority to go into private areas on vessels in order to inspect MSDs. Given those limitations, NRP has been very receptive to using NRP Reserve Officers to conduct courtesy vessel examinations in NDZs and other locations. These examinations are entirely voluntary and include an MSD examination. Reserve officers have no enforcement authority so their role is strictly educational.

States may delegate enforcement authority to local enforcement officials and a commonly cited NDZ enforcement success story is Avalon Harbor in California. There, since 1988, arriving boats are met by the harbormaster who drops a dye tablet in the vessel's toilet. If any dye is seen in the water coming from the boat, the boat is immediately removed from the harbor and prohibited from re-entering for one year. The boat owner is also fined by the City for the illegal discharge. Understandably, compliance in that one area has been outstanding. More typically, however, there is little or no government/marina enforcement of NDZs.

As previously noted, individual marinas can implement NDZ policies and otherwise discourage the discharge of sewage by slipholders. In Maryland, staff is aware of one marina, Herrington Harbour South (HHS), a 650-slip marina located in Herring Bay, that has used dye tablets in an attempt to enforce its NDZ policy. During 2006, 20+

slipholders were selected at random, were contacted ahead of time, and most had no problem with having a dye tablet dropped into their holding tank. During the course of the year, no sheens were observed from any vessel.

Use of the dye tablets helped increase awareness of the NDZ policy at HHS, however, as Assistant Manager Jed Dickman recently pointed out, a boater intent on discharging sewage could have simply bypassed the holding tank and discharged into the water one flush at a time. The tablets were not dropped into the toilets themselves because of privacy concerns and because management did not want to alienate the vast majority of boaters who are environmentally conscious and who are not discharging.

With enforcement so problematic, an NDZ stands little chance of success unless there is strong local support, significant outreach, and voluntary compliance. All this is undermined if boating and marine trades groups are vocally opposed to the NDZ. That is why it is important to cultivate support through a grass-roots education program under the lead of a local advocate or "champion" respected by the local boating/marine trades communities. As part of this outreach, it is important for boaters to understand that they are not being singled out and that all sources of pollution are being addressed.

C. Possible Options for the Future

1. Circulate this Report for Review and Comments

Recently, Pumpout Program staff was contacted by Maryland State Senator Brian Frosh's office to explore the idea of the Senator introducing a bill in the 2007 legislative session that would require the entire Maryland portion of the Chesapeake Bay to become an NDZ. Over the years, Senator Frosh has been keenly interested in the NDZ issue and had been a sponsor of the 1999 MSD legislation (Natural Resources Article §8-742) which basically laid the groundwork for future NDZs. In any event, the Senator would likely be interested in reviewing a comprehensive discussion of the NDZ issue including pros/cons and challenges (i.e., funding).

There are several partners/interested organizations that, over the years, have supported the Pumpout Program but have had varying positions on NDZs. These groups include the Marine Trades Association of Maryland, Boat/US Clean Water Trust, the American Boat and Yacht Council, Chesapeake Bay Yacht Clubs Association, the Chesapeake Bay Foundation, the Chesapeake Bay Commission, the EPA, and MDE. It would be helpful to have these organizations/agencies "fact check" this report plus DNR would benefit from any input/ideas they may have. In return, since several organizations have "staked out" positions one way or the other on the NDZ issue, they may benefit from DNR's attempt to present a non-biased perspective.

2. Pumpout/Clean Marina Staff Reconnect with Tributary Strategies Teams

[2014 Update: In 2010 funding and staffing for Tributary Teams ended. The EPA established the Bay-wide Total Maximum Daily Load \(TMDL\) in compliance with the Federal Clean Water Act. This action ended the voluntary approach and initiated a more regulatory approach to assure restoration actions are implemented by 2025 to achieve the nutrient and sediment reduction goals.](#)

An NDZ stands a much better chance for success if it is a locally driven initiative as opposed to being imposed from "on high." The Tributary Strategies Teams are uniquely positioned to be a link between DNR and local groups/organizations that may have an interest in NDZs (i.e., riverkeepers).

When the Tributary Strategies Initiative first began, both the Pumpout and Clean Marina staff communicated fairly regularly with the teams' coordinator at DNR plus met with individual teams/team members as needed. In fact, at one time, the Pumpout Coordinator was a member of the Lower Western Shore Team.

Partly because of the success of both the Clean Marina and Pumpout programs, over time, there was less and less need to connect with the teams until it has now reached the point that there is very little regular communication between these programs and the teams. Since membership on the teams has likely changed over the years, it may be helpful for both programs to reconnect with the teams to both share information and to explore opportunities. Although this may not result in any additional NDZs, the team members have a local focus/expertise that may help both programs move forward. There may also be local "champions" on one or more of the teams that would be willing to take a lead role in the implementation of local NDZs (i.e., riverkeepers).

3. Explore NDZ Opportunities Under CWA §312(f)(4)(A)

As previously noted, the most common way for a state to apply to the EPA for an NDZ is under CWA §312(f)(3). The EPA has published guidance on what is needed for states to get an NDZ designation under this section (i.e., having a sufficient number of pumpout facilities) and it was under this section that Herring Bay and the northern Coastal Bays were so designated.

Although less commonly used, an opportunity exists for states to submit NDZ applications to the EPA under CWA §312(f)(4)(A). Under this section, there is no requirement that states demonstrate a sufficient number of pumpout facilities (which is a time consuming process for DNR staff). Instead, an NDZ under this section is designated if the EPA Administrator determines, upon application by a state, that the protection and enhancement of the quality of specified waters within the state require the prohibition. At this point, staff is unaware of any published guidance for such an application so it is unknown what areas of Maryland waters may or may not qualify and how time consuming the NDZ application process would be.

One possible area of water to consider for NDZ designation under this section would be the Corsica River. This area currently has no pumpout facilities but, as the State's first "Targeted Watershed," Maryland is receiving significant funding from the EPA to make water quality improvements there. The EPA was recently contacted about the possibility of the Corsica becoming an NDZ under this section and the matter is under consideration. Depending upon what the EPA decides, this may be an opportunity for other areas of water, including any future Targeted Watersheds, to receive an NDZ designation under this section.

2014 Update: This request was not approved.

4. Explore Outreach Opportunities that Target the Owners of Type I MSDs

Over the years, the Pumpout Program has conducted extensive outreach that encourages boaters to install holding tanks and to use pumpout facilities. This effort has been very successful and the vast majority of Maryland vessels that have a toilet are now using pumpouts.

There remains, however, a relatively small minority of vessels that are equipped with Type I MSDs. As noted above, there are several advantages and disadvantages to using these systems. One option, therefore, would be to continue to encourage boaters to install and use holding tanks but acknowledge that some boaters will simply prefer to use a Type I MSD. The outreach would educate boaters that choose to use Type I MSDs on ways to use these systems as responsibly as possible.

Over the years, both the Pumpout Program and the Clean Marina Initiative have relied very heavily on the support of boating interest and marine trades organizations. These groups, which often oppose NDZs, would likely welcome the opportunity to help DNR develop an outreach program of this kind.