

PUGET SOUND NO DISCHARGE ZONE FOR VESSEL SEWAGE

No Discharge Zone Petition Requirements and Petition Research



Prepared for
Washington State Department of Ecology

Prepared by
Herrera Environmental Consultants, Inc.



Note:

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Prepared for
Washington State Department of Ecology
Northwest Regional Office Water Quality Program
3190 160th Avenue SE
Bellevue, Washington 98008

Prepared by
Herrera Environmental Consultants, Inc.
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
Telephone: 206/441-9080

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INTRODUCTION

The Washington State Department of Ecology (Ecology) is exploring the possibility of petitioning the United States Environmental Protection Agency (U.S. EPA) to designate some or all of Puget Sound as a No Discharge Zone (NDZ) for vessel sewage. The discharge of sewage from all boats and other vessels is regulated by federal law, and requirements vary depending upon distance from shore. Currently, if Washington State boaters and commercial vessel operators are within 3 nautical miles (nmi) of shore, their sanitary sewage must be at least minimally treated by a marine sanitation device (MSD) before discharge into the waters of Puget Sound. Beyond 3 nmi from shore, federal law permits the discharge of untreated sewage.

Under Washington State law, all sewage discharge from vessels is required to meet water quality standards. However, it is unlikely that vessel sewage discharges meet water quality standards even when treated. In addition, enforcement of discharge standards is impractical.

Sewage discharges from vessels may contain harmful levels of pathogens (viruses and bacteria), nutrients, and toxic chemicals (such as chlorine or other disinfectants), that are detrimental to water quality. As such, vessel sewage poses a threat to commercial and recreational shellfish beds, swimming beaches, aquatic life, and waters prone to nutrient enrichment, algae blooms, and oxygen depletion.

Several areas within Puget Sound are on the U.S. EPA 303 (d) list of impaired waters due to fecal coliform bacteria concentrations exceeding applicable water quality standards. Many commercial and recreational shellfish harvest areas and swimming beaches have been closed because of high bacteria levels. Other areas are listed based on having depleted dissolved oxygen levels that stress aquatic life, caused in part by nutrient enrichment. These problems are highly complex and likely result from a combination of natural and human actions. Sewage discharges from vessels are not suspected to be the root cause of specific impairment listings or beach closures, but certainly contribute to the problem. This contribution may be reduced through the establishment of a NDZ.

The U.S. EPA is authorized, under the Federal Clean Water Act (CWA), to institute a NDZ in waters that are threatened by the discharge of sewage waste from vessels. The authorization as documented in federal code allows the U.S. EPA to “completely prohibit the discharge from all vessels of any sewage, whether treated or not” (40 CFR 401.4 [a]). The U.S. EPA, however, cannot act unilaterally to establish a NDZ. A NDZ can only be established following receipt and approval of a petition from a state requesting that the U.S. EPA designate a specific area as a NDZ. Currently 8 out of 10 U.S. EPA regions have instituted NDZs. Washington State’s region (Region 10) is not one of them.

The process of successfully petitioning the U.S. EPA to create a NDZ is well established. There have been 80 NDZs established in 19 states since passage of the CWA; and since 2000, there have been 42 NDZs established in 11 states. A complete list of all the NDZs that shows their locations, dates of designation, and criteria used for establishment is available from the

U.S. EPA website (<http://water.epa.gov/polwaste/vwd/vsdnozone.cfm>). While the waterways protected, and specific reasons for designation vary by region, the petitions contain the same elements and a similar level of detail, especially among the recently established NDZs.

Ecology and Washington State Department of Health are managing funds received from U.S. EPA to coordinate a 6-year strategy to prevent, reduce, and control pathogens in Puget Sound. Herrera Environmental Consultants (Herrera) is assisting Ecology with the first phase of the NDZ Project by researching petition requirements and gathering and summarizing data and background information that will be used in the next phase of the project for building a successful petition.

This report describes the approaches for establishing an NDZ, the required elements of a successful petition, and an overview of lessons learned by other states that have recently established an NDZ. The compiled information is presented in the following sections:

- Approaches to Establishing a NDZ
- Petition Requirements
- Petition Process
- NDZ Review Findings

Much of the information provided was gleaned from a review of the federal legislation, code, and guidelines. The CWA (40 CFR 401.4[a]) is clear on the methods for qualification and the legally required elements of a NDZ petition. However, an important objective of this project was to interview state officials and regional U.S. EPA staff responsible for five of the recently designated or pending NDZs, and to review the associated petitions. The purpose of the petition interviews and reviews was to determine how the technical aspects of recent NDZ petitions were fulfilled and to gain insight into issues and approaches relevant to Puget Sound. In late 2011, People for Puget Sound conducted a similar review. Their findings guided this review, and identified primary resources (e.g. applicable federal legislation) which were used in the development of this document.

APPROACHES TO ESTABLISHING A NDZ

The CWA describes three different approaches that can be used to petition U.S. EPA to designate an area as a NDZ. By far the most common approach is to justify the need for establishing an NDZ, and then document that there are a reasonable and legally adequate number of vessel sewage pump-out facilities. Federal law also allows establishment of NDZs even if there are not enough pump-out facilities under one of two conditions: 1) the water body being protected is considered especially vulnerable or pristine or 2) vessel sewage discharges may compromise the water quality of a drinking water intake.

The specific language from the CWA for each of the three possible approaches follows:

- **CWA §312 (f)(3) - The State determines that the water body requires greater environmental protection, and U.S. EPA finds that adequate pump-out facilities are available.** A State may completely prohibit the discharge of sewage from vessels, whether the sewage is treated or not, into some or all of its waters if: (1) the State determines that the protection and enhancement of the quality of the waterbody requires greater environmental protection than the current federal standards allow; and (2) U.S. EPA determines that adequate facilities for the safe and sanitary removal and treatment of sewage from vessels are reasonably available.
- **CWA §312 (f)(4)(A) - U.S. EPA, upon application by a State, determines that the protection and enhancement of the water body requires establishment of an NDZ.** If U.S. EPA determines, upon application by a State, that the protection and enhancement of specified waters requires sewage discharges to be prohibited, U.S. EPA will, by regulation, completely prohibit the discharge of sewage from vessels, whether the sewage is treated or not, into those waters. Unlike NDZs established pursuant to CWA 312 (f)(3) (described above), the State does not have to show that adequate pump-out facilities are reasonably available to request that this type of NDZ be established.
- **CWA §312 (f)(4)(B) - U.S. EPA, upon application by a State, will, by regulation, prohibit the discharge of sewage from vessels within a drinking water intake zone.** The purpose of this NDZ is to safeguard human health through the protection of intake waters used for drinking. The State does not need to show that adequate pump-out facilities are reasonably available to establish this type of NDZ.

PETITION REQUIREMENTS

Petition requirements are summarized below for those requiring adequate vessel sewage pump-out facilities under CWA 312 (f)(3) and those not requiring adequate vessel sewage pump-out facilities under CWA 312 (f)(4)(A) and (B).

Petition Requirements under CWA 312 (f)(3)

Under CWA 312 (f)(3), there are seven required elements for a successful petition. However, the elements fall into two main subject areas: 1) justifying that there is a need for greater protection beyond what is afforded by existing regulations, and 2) documenting that the area of the proposed NDZ has an adequate number of pump-out facilities. The seven elements are:

1. A certification that the waters included in the petition require greater environmental protection than the applicable federal standard
2. A map showing locations of pump-out facilities
3. A description of the location of pump-out facilities
4. A schedule of operating hours for the pump-out facilities
5. Vessel size limits or draught limits for the pump-out facilities
6. Information on treatment of wastes from pump-outs and verification that treatment conforms with federal law
7. Information on area vessel population and usage

Providing accurate and relevant information documenting the need for greater environmental protection is a critical element. U.S. EPA cannot designate a NDZ if there is no clear justification for its need. However, 40 CFR 401.4 does not specify the type of data, or level of detail that is considered sufficient for the U.S. EPA to make a judgment as to whether greater environmental protection is warranted. Based on other recent petitions, described in more detail in subsequent sections, a variety of data may be used. In general, successful petitions include a narrative description that summarizes the economic value of the resource, recreational uses (e.g., swimming beaches and water sports), existing water quality and public health concerns related to sewage discharges, locations of commercial and recreational shellfish areas, and the ecological importance of the resource.

The majority of the petition focuses on documenting the adequacy of pump-out facilities. The legal basis for accepting or denying a petition submitted under the (f)(3) pathway is determined by the pump-out facility and vessel data that are presented in the petition (Ann Rodney, U.S. EPA Region 1, Pers. Comm.). The U.S. EPA bases its decision on whether there are adequate numbers of pump-out stations according to the methods set forth in the

Clean Vessel Act Pump Station and Dump Station Technical Guidelines (Federal Register, Vol. 59, No. 47, March 10, 1994). These guidelines specify that there should be one pump-out station or dump station for every 300 to 600 vessels. There are worksheets contained in Federal Register (Vol. 59, No. 47, March 10, 1994) which use vessel data (boat numbers, boat sizes, boating use patterns, numbers and distribution of existing pump-out facilities, and boat locations during the boating season) to determine the need for pump-out stations and dump stations. Although using this worksheet is not required, it is highly recommended (Ann Rodney, U.S. EPA Region 1, Pers. Comm.).

Petition Requirements under CWA 312 (f)(4)

Under CWA 312 (f)(4)(A) and (B), the decision to establish a NDZ is based entirely upon the need to protect the water. Therefore, it does not require documentation of pump-out facilities or vessel usage but instead the required elements focus on the features or attributes of the protected area. The required elements include:

1. Identification of water recreational areas
2. Identification of drinking water intakes
3. Identification of aquatic sanctuaries
4. Identifiable fish-spawning or nursery areas
5. Areas of intensive boating activity

There is little recent precedent for establishing a NDZ based on CWA 312 (f)(4)(A) criteria. Only two such NDZs, the Florida Keys and Boundary Waters Canoe Area, have been established using this part of the law. The state of California is also currently engaged in establishing the remaining unprotected areas of its marine coast line as a NDZ based on the (f)(4)(A) criteria. Since there is little precedent and little published information regarding the necessary data and research for a NDZ to qualify under (f)(4)(A), to use this approach would involve working closely with the regional U.S. EPA office to agree on the required elements and level of detail to develop a viable petition (Paul Amato, U.S. EPA Region 9, Pers. Comm.). Additionally, if after completing the pump-out station assessment, it appears that some areas are simply not reasonably served by pump-out stations, the State of Washington may want to consider excluding the underserved areas from the NDZ petition, and seek protection for the excluded areas under (f)(4)(A) at a later date.

Only one NDZ representing a small segment of the Hudson River has been obtained based on (f)(4)(B) criteria for drinking water intake zones. Even though the (f)(4)(B) pathway appears to be the most straightforward, it is not applicable in Puget Sound due to an absence of drinking water intakes, and is therefore not discussed further.

Since the (f)(3) approach seems most applicable to Puget Sound, more detailed information on application requirements using this approach is included as Appendix A.

PETITION PROCESS

The following is a list of the general steps petitioners and U.S. EPA take to establish a NDZ based on the (f)(3) process.

Steps taken by the state:

1. The state (or municipality or watershed group under state supervision) decides to seek a NDZ designation for a water body
2. NDZ boundaries and areas are defined
3. Data (environmental, economic, vessel use, and pump-out facility statistics) are gathered
4. Stakeholder groups are contacted to gain information and ideas, and obtain input on concerns
5. The state makes a preliminary determination of whether there is adequate environmental justification and sufficient pump-out facilities for vessels such that it is feasible to establish the NDZ
6. The state remedies any issues and works to foster stakeholder support
7. The state writes the petition that addresses the seven required elements outlined in 40 CFR 401.4
8. The state submits the petition to the U.S. EPA

Steps taken by U.S. EPA:

1. U.S. EPA receives a NDZ application submitted by the state.
2. U.S. EPA reviews the application.
3. U.S. EPA visits the location of the potential NDZ designation.
4. U.S. EPA meets with the state environmental agency (in this case Ecology).
5. U.S. EPA assesses if the intent of the legislation has been met. While not explicitly required as part of the petition, the U.S. EPA will also review the public outreach and enforcement plan for the NDZ.
6. U.S. EPA decides if it is appropriate to designate the area as a NDZ. If appropriate, the regional administrator (RA) signs the "Receipt of Petition."
7. The "Receipt of Petition" is published in the Federal Register for at least a 30-day public comment period. If there are no substantive comments during the public comment period, the RA signs the "Final Determination."

8. Should there be comments, U.S. EPA prepares a “Response to Comments” and distributes it and the “Final Determination” to commenters.

NDZ are authorized under the CWA, and once approved are published in the Code of Federal Regulations. Therefore, the authority to regulate NDZs is at the federal level. In some cases, individual states have established processes by which NDZ petitions must be developed in that particular state. However, once the petition is submitted and approved by the EPA, it becomes the responsibility of the EPA. Enforcement of NDZ regulations is generally undertaken by the U.S. Coast Guard, but may also be incumbent on State Police, and in certain cases, municipalities may have limited enforcement authority (Jeff Myers, New York State Department of Environmental Conservation, Pers. Comm.).

The extent to which U.S. EPA is involved with petition development varies. The State of Virginia for example, has little contact with the U.S. EPA throughout the process. Virginia typically completes a draft petition without any U.S. EPA input, and submits it to the U.S. EPA, where it is reviewed and returned with comments (Liz McKercher, Virginia Department of Environmental Quality, Pers. Comm.). In Region 1, however, the U.S. EPA has been very involved to the point that U.S. EPA interns were largely responsible for vessel data and pump-out facility research for the Boston Harbor NDZ petition (Todd Callaghan, Massachusetts Office of Coastal Zone Management, Pers. Comm.). Although U.S. EPA involvement throughout petition development is not required, the majority of state and U.S. EPA staff interviewed emphasized that it is beneficial to have frequent contact with the U.S. EPA to better ensure the process goes smoothly.

There is no specific timeline for establishing a NDZ. The time it takes is largely dependent on the time it takes to gather the requisite information (i.e., vessel and pump-out facility statistics) and then to remedy any deficiencies. Straightforward petitions, where vessel and pump-out data are readily available, and there are obviously sufficient existing pump-out facilities, can take less than a year from inception to designation (Jeff Meyers, New York State Department of Environmental Conservation, Pers. Comm.). More complex petitions can take much longer. For example, the Boston Harbor NDZ was proposed in 2002 but was not designated until 2008, although most of the activity occurred over a 2-year period (Todd Callaghan, Massachusetts Office of Coastal Zone Management, Pers. Comm.).

NDZ REVIEW FINDINGS

Despite the large number of recently established NDZs, there is little published literature on how the petition process is administered. There is also little information clearly detailing the level of detail of specific information required to satisfy the petition elements. There are no established NDZs in U.S. EPA Region 10, so there is not the same level of institutional knowledge of the petition process as there is in the Northeast and Mid-Atlantic regions where NDZs are common. Therefore, an obvious first step in evaluating how this process could be applied to Puget Sound, was to seek advice from those states and U.S. EPA regional offices that have recently gone through the process.

Five examples of designated or pending NDZs were chosen for review and are listed in Table 1. These five areas were selected based on broad ranging similarities with Puget Sound (e.g., presence of commercial shellfish beds, long distances between ports and open water, and high level of recreational use) and their recent or pending designation.

Table 1. Reviewed No Discharge Zones.				
Reviewed NDZs by State	U.S. EPA Region	Waterbody	Date Designated	Designation Type
Massachusetts	1	Boston Harbor	7/25/2008	(f)(3)
Maine	1	Casco Bay	6/27/2006	(f)(3)
New York	2	Long Island Sound Lake Ontario	9/8/2011 12/16/2011	(f)(3) (f)(3)
Virginia	5	Several Small Areas	Pending	(f)(3)
California	8	Entire Marine Coastline	Pending	(f)(4)(A)

In addition to reviewing the five petitions, staff members from the associated state and U.S. EPA offices responsible for developing and accepting the NDZ petitions were interviewed. Interviewees were questioned about their role in the process, data gathering techniques used, and problems they may have encountered. The following subsections convey the information that was learned from reviewing the five petitions and conducting the interviews.

Motivations for Seeking a NDZ

The people interviewed expressed a range of motivations for seeking a no discharge designations for some or all of their waters. Massachusetts and New York both listed pressure from municipalities, environmental groups, and watershed groups as a primary reason. Some NDZs have been established due to encouragement by U.S. EPA, which may also have been driven by pressure from environmental groups. Virginia state law only allows establishment of a NDZ for “the improvement of impaired tidal estuaries”. Consequently, NDZs in Virginia are often associated with a TMDL implementation plan or designated in response to a shellfish

harvest area closure (Liz McKercher, Virginia Department of Environmental Quality, Pers. Comm.).

Gathering Pump-out Station Data

Interviewees were asked to describe methods used for gathering information on pump-out facilities. All interviewees responded that the process of identifying pump-out facilities for recreational vessels began with identifying recipients of Clean Vessel Act (CVA) grant funding. Additional data were gathered by contacting local harbor masters, who typically maintain data on pump-out facility statistics. For the most part though, only pump-out stations that receive CVA funding were included in the analysis and petition. It was acknowledged that this strategy likely overlooked many private pump-out facilities (such as at yacht clubs or private marinas). However, most of the interviewees felt that by using this conservative estimate of available pump-out facilities they were providing further insurance of the adequacy of facilities.

CVA funding is only provided for recreational pump-out facilities, so locating pump-out facilities capable of servicing large commercial vessels was more difficult. In most instances, harbor masters were contacted to learn if pump-out facilities for large commercial vessels were available. Frequently they were not. To help address this data gap, commercial stakeholder groups were directly contacted to get information about what they would need to be able to comply with no discharge regulations. (Note: California did not collect information on pump-out facilities since their application is not contingent on pump-out facility availability.)

Gathering Vessel Data

In a larger area with higher commercial traffic, like Puget Sound, determining boat usage is difficult. Interviewees were asked to describe the methods they used for gathering vessel usage statistics. The following methods were suggested; where applicable, the states using them are noted in parentheses:

- Boater registration and licensing statistics (Virginia, New York, Massachusetts, Maine)
- Studying aerial photos taken during the summer and counting boats (Maine, Massachusetts, New York)
- Contacting individual marinas (Massachusetts, Maine)
- Contacting Harbor Masters (Massachusetts)
- New York State Wide Clean Vessel Plan Survey (New York)
- U.S. Fish and Wildlife/U.S. Coast Guard – recreational boating surveys
- Army Corps of Engineers – waterborne commerce statistics
- American Red Cross – accident and boat usage statistics

In many cases, interns and volunteers conducted the boater surveys. For Washington, the Vessel Entries and Transits (VEAT) database maintained by Ecology may also be a useful source of information for commercial vessels over 300 tons.

Determining Adequacy of Pump-out Facilities

The Clean Vessel Act Pump Station and Dump Station Technical Guidelines (Federal Register, Vol. 59, No. 47, March 10, 1994) provides a specific formula that can be used to make a determination of whether there are an adequate number of pump-out facilities. Essentially, there should be one pump-out station for every 300 to 600 vessels. The actual number can be derived using worksheets contained in Federal Register, Vol. 59, No. 47, March 10, 1994. However, in a few cases petitioners elected to be conservative by using less than the recommended maximum (e.g., 1 for every 400 vessels) (Jeff Myers, New York Department of Environmental Conservation, Pers. Comm.).

Although determining whether there are an adequate number of pump-out stations is straight forward, the determination also must consider practical limitations; there may be an adequate number area-wide but they may not be well distributed. This is especially a problem in larger NDZs. Through interviews, Massachusetts petitioners found that boaters are only willing to go about 15 minutes out of their way to use a pump-out facility. This limitation should also be considered in considering adequacy.

Compliance, Enforcement, and Public Education

While there is no legal requirement to include a plan for enforcement and outreach, their inclusion makes for a much stronger application (Todd Callaghan, Massachusetts Office of Coastal Zone Management; Jeff Myers, New York Department of Environmental Conservation, Pers. Comm.) While enforcement is necessary, many applications focus on outreach and accessibility as the primary motivator for compliance (Gale Orcutt, People for Puget Sound, Pers. Comm.). Several of the interviewees conceded that enforcement, especially in more open water areas, is inherently difficult. There are simply too many boats and too few law enforcement. As a result, they felt that encouraging compliance by making it easy (i.e., close, easily accessible, and well-advertised pump-out facilities), and through targeted outreach campaigns are more effective approaches. However, some did comment that for commercial vessel operators there is a direct monetary cost related to the time and inconvenience associated with vessel pump-out. Therefore, the threat of a substantial fine may be a more effective deterrent for this group.

Since there is no requirement to include compliance, enforcement and public education strategies, there is no set format on how the data should be presented. Using the Boston Harbor, Long Island Sound, and Lake Ontario NDZ petitions as a template, the enforcement section may include a brief overview of:

- The regulation (i.e., what vessels are regulated and what is required)
- A written plan for the enforcement of the designated NDZ area
- A summary of existing or proposed local ordinances enacted to enhance regulation of vessel dumping
- Agencies with the authority to enforce the law (i.e., state police, USCG, and in certain instances municipal police)

Public Outreach Strategies

Almost without exception, the interviewees felt that public outreach was critical, not so much for the NDZ petition process, but for success in implementing the NDZ. For the most part, the public (including the boating public) are receptive and supportive of the idea of an NDZ. This support can be fostered through public meetings and publicity efforts. One interviewee commented that a good strategy for gaining support is to “bring it back to the poop” and really make people think about what they might discharge in the water and whether they would want to swim, fish and bathe in it (Todd Callaghan, Massachusetts Office of Coastal Zone Management, Pers. Comm.).

Public meetings proved not to be the best venue for receiving input from commercial stakeholder groups. Although they attended the meetings and were the group most concerned about the NDZs, they were reluctant to voice their concerns in this forum. A number of interviewees mentioned that approaching these groups individually, was a much more effective technique for determining their needs.

Interviewees from Maine, Massachusetts, and New York mentioned that despite everyone’s best intentions there will always be a few stakeholder groups who speak out against the NDZ. These groups may never be in favor of the NDZ. However, it is particularly important to work directly with these groups to assess and fulfill their needs in order to increase their motivation, ability, and willingness to comply with NDZ regulations.

As with enforcement, there are no set guidelines as to what the public education and outreach sections of the petition should contain. Based on interview responses, and petition reviews common elements of the outreach section include:

- A schedule of planned outreach and education events
- A list of stakeholder outreach that has already occurred
- Information dissemination strategies
- A list of the groups, communities, and government agencies that will be involved in outreach
- Detailed information for boaters about where pump-out facilities are located
- Information for the public about why the NDZ was created and why it is harmful to dump treated waste into the water body
- A brief description of how this outreach will be achieved

Difficulties Encountered During the Petition Process

Few difficulties were mentioned by those interviewed about the NDZ petition process. For the most part, the interviewed parties were positive about the process and intimated that it is relatively easy and straight forward. Most interviewees advised that difficulties can be avoided by:

- Understanding the required steps (and elements) of the petition process
- Fostering a good working relationship with the U.S. EPA regional office
- Using successful NDZ petitions as a template

CONCLUSIONS AND RECOMMENDATIONS

Developing a successful petition for a NDZ using the (f)(3) approach is a relatively straightforward and well established process. Many states have recently established, or are currently in the process of establishing NDZs. As a result there are several petitions which can be used as a template for creating a petition for Puget Sound. In particular, Massachusetts' petition for Boston Harbor and New York's petitions for Long Island Sound and Lake Ontario would be worthwhile to use as a template. All of these are high quality (U.S. EPA approved) petitions whose respective water bodies have some common elements with Puget Sound. Staff from other state and regional offices should also not be overlooked as a resource. The interviewees contacted for the development of this memo were open, eager, and accessible, and it is clear that Washington State has experienced mentors and advocates willing to offer support throughout the petition process.

All of the interviewees indicated that determining the adequacy of pump-out stations is the most important aspect of the petition, as this is the legal basis which will allow the U.S. EPA to approve a petition. The 'certification of need' or environmental justification is also an important component. However it appears based on the interviews and petitions reviewed that it is primarily an inventory of the natural, economic, and recreational functions provided by the water body, and does not need to meet rigorous specified criteria.

Some areas of Puget Sound may qualify for establishment of an NDZ using the (f)(4)(A) approach (i.e., the approach that relies only on establishing the significance of the water body). However, there is far more precedent for establishing NDZs via the (f)(3) pathway, and therefore more resources for assistance and examples to follow. Also, from a pragmatic viewpoint, insuring that adequate numbers and locations of pump-out facilities exist is ultimately the best way to insure compliance and resource protection.

APPENDIX A

No Discharge Zone Petition Requirements Under CWA 312 (f)(3)

NO DISCHARGE ZONE PETITION REQUIREMENTS UNDER CWA 312 (F)(3)

The U.S. Environmental Protection Agency (EPA) requires seven elements for a successful petition to establish a No Discharge Zone (NDZ) for vessel sewage under the Clean Water Act (CWA) Section 312(f)(3) and 40 CFR 401.4. The seven elements are:

1. A certification that the waters included in the petition require greater environmental protection than the applicable federal standard.
2. A map showing locations of pump-out facilities
3. A description of the location of pump-out facilities
4. A schedule of operating hours for the pump-out facilities
5. Vessel size and draught limits for the pump-out facilities
6. Information on treatment of wastes from pump-outs and verification that treatment conforms with federal law
7. Information on area vessel population and usage

Element 1 relates requires justification that there is a need for greater environmental protection beyond what is afforded by existing regulations. Elements 2 through 7 require documentation that the area of the proposed NDZ has an adequate number and availability of pump-out facilities.

1. Physical Description and Certification of Need

The physical description of the area that the NDZ will cover should include pertinent maps as well as a written description of the area. The physical description should be detailed and include the following information:

- The major bodies of water that will be affected by the NDZ
- GPS coordinates that mark the key features of the area
- The drainage area that will be affected
- The average depth of the various areas affected
- A scientific description of the water affected
- Any other physical descriptions that help to clarify the region and its key features

The certification of need is expressly required by the CWA. It must clearly state that this region needs additional assistance and why. This can be accomplished with a few sentences, such as “The area described needs greater protection than the current federal standards afford. This is because...”. This statement is used to introduce the more detailed description of the environment and existing problems. Though not expressly required, the certification of need may be presented as a signed attached letter from the state authority such as the governor or an agency director, as it is in New York State petitions.

The section describing the environmental attributes and issues faced by the area affected by the NDZ is one of the more detailed sections of the petition document because it provides the foundation for the certification of need. The level of detail and types of analysis required for this section is not strictly specified in 40 CFR 401.4. Therefore, other recently accepted petitions are the best guide. Among the five petitions reviewed for this study, the level of detail and type of data included in this section depended on the size of the NDZ and the complexity of issues faced by the area. In general, analysis was limited to existing data and primarily provided a narrative inventory of the natural resources.

With the exception of California, no states conducted a pollutant loading analysis or any sort of quantitative impact assessment, and none attempted to establish a link between vessel discharges and specific water quality problems. In fact, some interviewees noted that it was important to acknowledge non-vessel related contributions to reduced water quality (T. Callaghan and J. Meyers, pers. comm.). As would be expected, the California petition provided a more rigorous scientific analysis, as they are establishing the NDZ based on the CWA 312 (f)(4)(a) criteria (Paul Amato, Region 8 EPA). The *Environmental Issues* section of New York State’s Long Island Sound NDZ petition was the most detailed of the petitions reviewed. It contained about 10 pages of text; some of the main topics covered included:

- Long Island Sound’s Conservation Management Plan
- New York State Significant Coastal Fish and Wildlife Habitats
- Federal Significant Coastal Habitats
- National Wildlife Refuges
- Important Bird Areas
- The Nature Conservancy Preserves
- Stewardship Areas
- Important Species
- Recreational Resources
- Water Quality Issues and Problems
- Long Island Sound Water Quality Assessment

2. Pump-out Facility Map

A map showing the locations of sewage pump-out facilities for recreational and commercial vessels must be provided with the petition. This should be followed by a written description of pump-out facilities available. Information about the pump-out stations at each facility should include:

- Number of pump-out stations
- Type of pump-out station (portable, stationary, mobile, remote operated multi-station)
- Specific location of pump-out station(if within a marina, then the specific location within the marina)

Optionally, the same information for dump stations (not requiring a pump) in the affected area may be included.

3. Pump-out Facility Location Description

The description of the pump-out locations should include legal (map) and colloquial (commonly known) location names, as well as radio hailing frequencies where possible.

4. Pump-out Facility Operating Hours

A full listing of scheduled operating hours for each facility is required. This can be presented in a simple chart or table. Additional optional information for the facilities may include:

- Cost per use
- Name of the owners/operators
- Number of vessels that can be accommodated in a day
- Description of accessibility
- Maintenance plans
- Descriptions of any proposed facilities and their completion schedule

5. Pump-out Facility Limits on Vessel Size and Draught

The maximum vessel length, maximum vessel draught, and the mean low water elevation of the marina must be identified and listed. This determines which vessels are able to use the facility and which will be excluded from use. Additional optional information for this element includes:

- Draught limitations adjacent to the pump-out facility
- Maximum height of boats accommodated (including bridges, arches, antennas, etc.)
- Percentage of vessels precluded from using the facilities in the area

6. Pump-out Facility Sewage Disposal Methods

A written description of methods used to dispose of sewage collected from vessels at each pump-out facility is required. There are four acceptable methods for disposal, although the first two are preferred:

1. Discharge to public wastewater system and treatment facility
2. Discharge to a holding tank with removal and transport by a licensed septic hauler to a municipal septic receiving/treatment facility
3. Discharge to a package treatment plant with subsequent discharge back into coastal waters
4. Discharge into an on-site septic system

This same description may be provided for any dump stations within the proposed area, although this information is optional.

7. Vessel Population and Usage

The total number of recreational and commercial vessels that use the proposed area on both a regular and transient basis must be estimated. Although the regulation requires only estimating the total number vessels for the entire NDZ, it is more practical to estimate the number of vessels that are likely to be served by each of the identified pump-out facilities. In either case, this is inherently a number that will have to be estimated. It is important to describe the methods used to determine the number of vessels. Additional optional information for this element may include the estimated number and percentage of vessels with Type III Marine Sanitation Devices (MSDs).