Port of Seattle

Shilshole Bay Marina
Clean and "Green" Best Management Practices

2005 AAPA Environmental Awards Competition

Category: Environmental Enhancement

Port of Seattle
Health Environmental and Risk Services

June 8, 2005

Contact: Wayne Grotheer, Health Environmental and Risk Services
Port of Seattle, P.O. Box 1209, Seattle, WA 98111
(206) 728-3190

Table of Contents

I. INTRODUCTION – PAPER HIGHLIGHTS

The Port of Seattle (Port) hereby submits its Shilshole Bay Marina Clean and "Green" Best Management Practices to the American Association of Port Authorities (AAPA) 2005 Environmental Awards Competition for consideration under the Environmental Enhancement category. The Best Management Practices (BMPs), as established in 2003, represent a voluntary, collaborative effort between the Port, Shilshole Bay Marina staff, marina customers, tenants and the public that goes far beyond the current regulatory framework. They are part of an overall effort by the Port to protect and enhance the environment.

The BMPs include establishment of new and creative pollution prevention practices and the expansion of solid waste and hazardous material reduction and recycling efforts. The Port also proactively provides education and enforcement programs to reinforce these new policies and guidelines. The benefits of implementing and enforcing these BMPs are numerous to improving air and water quality and also serve to educate future generations on the importance of air and water quality elements of the environment in and around Shilshole Bay Marina.

II. GOALS AND OBJECTIVES

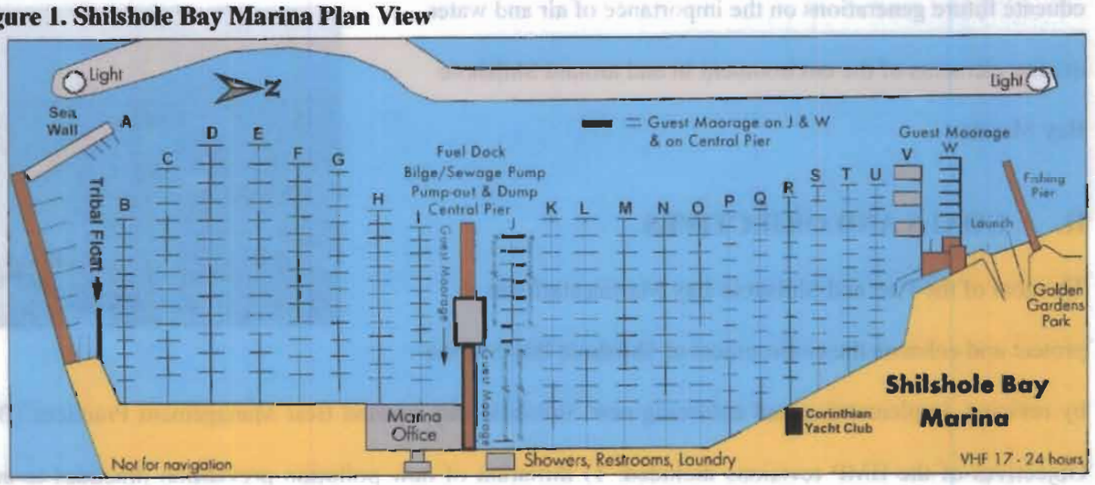
The goal of the Port and Shilshole Bay Marina staff was to protect and enhance the environment at Shilshole Bay Marina by revising, implementing and enforcing new Shilshole Bay Marina Best Management Practices (BMPs). Objectives of the BMP revisions included: 1) Initiation of new pollution prevention practices to achieve zero discharge to air and water; 2) Expansion of solid and hazardous material reduction and recycling efforts; 3) Education campaign for Port staff, customers, tenants and general public about importance of pollution prevention measures; and 4) Enforcement of policies, guidelines and agreements (See Attachment 1 - Shilshole Bay Marina Best Management Practices).

III. DISCUSSION

A. Background

Shilshole Bay Marina is located on the east shore of Puget Sound, near the entrance to the Ballard Locks in Seattle, Washington. The premier sailing center of the Northwest, it is owned and operated by the Port and is Seattle's largest saltwater recreational boating facility. The property, 75 acres of water and 15 acres of land, includes approximately 1,500 total long-term moorage slips, including guest moorage for approximately 100 boats, dry boat moorage for 75 trailerable boats, commercial,charter, sailing school, and Tribal moorage, as well as approximately 50,000 sq ft of office, retail, restaurant, and commercial space, including a fuel dock and large commercial boat yard. There are a maximum number of 300 liveaboard boats at the marina at any one time. Shilshole Bay Marina is a recreational facility enjoyed by a variety of boaters and the community who enjoy the activities, views and walk along the seawall esplanade. Shilshole has a large sailboat racing customer base and is the site of numerous large and small racing events throughout the boating season. See Figure 1.

Figure 1. Shilshole Bay Marina Plan View



At Shilshole Bay Marina, fuel spills, garbage, sewage and food waste are among the potential environmental hazards from boaters. The cumulative effects of even minor spills can be extremely harmful to the marine environment so it is vitally important that everyone be a good environmental steward. In an effort to increase environmental stewardship of the marina, the Port has undertaken significant

environmental efforts with the principal goal of improving water and air quality by reducing pollutants to both.

The Port and Shilshole Bay Marina are committed to preserving and enhancing the environment through proper management of all activities that occur at the Shilshole Bay Marina facility. Given this commitment and in accordance with the Department of Ecology rules, United States Coast Guard regulations, and the Federal Clean Water Act, they established Best Management Practices (BMPs) in the hope that they would ensure the continued safekeeping of the harbor and marine environment.

Shilshole Bay Marina updated these BMPs in 2003 to attempt to achieve zero discharges to the environment and exceed regulatory requirements. All moorage customers must sign and agree to the principles outlined in the document. Through establishment of the new BMPs, the Port of Seattle is setting an example of how to operate a marina clean and "green," environmentally speaking, by implementation and enforcement of the BMPs.

B. Objectives and Methodology

Objectives to achieve the goal of protecting and enhancing the environment at Shilshole Bay Marina by revising and implementing new Shilshole Bay Marina Best Management Practices (BMPs) included: 1) Initiation of new pollution prevention practices to achieve zero discharge to air and water; 2) Expansion of solid and hazardous material reduction and recycling efforts; 3) Education campaign for Port staff, customers, tenants and general public about importance of pollution prevention measures; and 4) Enforcement of policies, regulations and agreements. Methods for achieving these objectives are described in detail in the sections below.

1) Initiation of Pollution Prevention Practices to Achieve Zero Discharge to Air and Water

a. Air Pollution Prevention BMPs

Boats are significant sources of diesel particulates, which present the greatest risk to public health from air pollution in the region. Carbon dioxide from burning fossil fuels contributes to global climate change and air pollution damages crops and forests and obscures views such as Mt. Rainier and the Olympic Mountains. Shilshole Bay Marina staff incorporated practical ways to prevent or reduce emissions to the air into educational materials and collaborated with the fuel dock tenant to promote the availability of biodiesel at the fuel dock in their efforts to reduce air pollution.

1. Air Pollution Prevention Educational Materials

Shilshole Bay Marina staff prepared and distributed flyers and other educational material with tips on reducing emissions to marina customers, tenants and the general public. These materials were available on the website, posted on docks at the marina, and published in local boating periodicals. A sample of some of the recommendations printed on the educational materials included the following: 1) Avoid use of solvent-based coatings and cleaners on sunny days; 2) Choose "eco-friendly" cleaning and coating compounds; 3) Reduce emissions on hot sunny days when sunlight "cooks" emissions from boats, paints and solvents into smog; 4) Take special care on air quality "call to action" days to prevent emissions; 5) When replacing your engine, choose a direct injected 2-stroke or 4-stroke engine. In addition to producing less air and water pollution, they burn 30-40% less gas and oil; 6) Follow manufacturers maintenance schedules; 7) Avoid refueling on hot stagnant days or wait until evening; 8) Make sure gas caps seal tightly and replace if defective; 9) Avoid spilling gasoline; 10) Use caution when pumping gasoline into boats and containers; 11) Use containers you can handle easily and hold securely, 12) Use a funnel or a spout with an automatic stop device to prevent overfilling; 13) Close vents on portable tanks when engines are not in use or when tanks are stored; and 14) Transport and store gasoline out of direct sunlight in a cool place.

2. Biodiesel as Alternative Fuel Source

Shilshole Bay Fuel Dock LLC, a tenant at Shilshole Bay Marina, was attempting to find ways in early 2000 to increase efficiency of the facility, provide for easier and lower-cost oil changes for boaters, provide for more environmentally-sound practices for oil-change, and provide alternatives for more efficient fuel sources including biodiesel fuel.

Most boaters within Shilshole Bay Marina used to either change their own oil or have vendors do it for them. This involved carrying new oil to their boats in the closed containers in which they purchased it and putting their used oil in closed plastic containers. It was time-consuming and had the added hazard of possible spills while getting the oil on and off vessels. Oil spilled in bilges is sometimes later pumped out illegally.

Shilshole Bay Fuel Dock LLC installed a new fuel dock system fuel in June of 2001 at the marina site. The new fuel dock system incorporated a 250-gallon waste tank inside of a pre-fabricated structure on the east side. A high-capacity pump is used to pump used oil from vessels into this waste tank. New oil is then pumped into vessel engine crankcases via oil lines with special metering nozzles from tanks located in or just east of the shed. There is less likelihood of spills because the oil is transferred via lines instead of buckets. Spill Prevention BMPs are required during operation of the marine lube center and assist in reducing the possibility of spill or leakage of oil into the water from the four oil tanks that have a combined capacity of up to 1,000 gallons. These new practices were incorporated into the 2003 BMPs.

Shilshole Bay Fuel Dock LLC also began offering B20 biodiesel fuel as an alternative to conventional diesel fuels to boaters in June of 2001. There are potential economic, environmental, and energy benefits associated with the use of biodiesel. Biodiesel is a domestically produced alternative fuel that can be made

from any fat or vegetable oil. The most commonly used form of biodiesel is a blend of 20 percent biodiesel mixed with 80 percent conventional petroleum diesel fuel, which is commonly referred to as B20.

According to the Puget Sound Clean Cities Coalition, "The emissions benefits of biodiesel include significantly lower emissions of carbon monoxide, hydrocarbons and particulate matter compared to petroleum diesel fuel. Emissions also contain far lower levels of the toxic contaminants typically associated with diesel fuel. Life-cycle reductions in carbon dioxide are also significant. In addition, biodiesel has only trace amounts of sulfur, resulting in significant reductions in sulfur dioxide (SO2) emissions, which contribute to the development of acid rain. Emission reductions are achieved without the need for additional emissions control equipment, but biodiesel is compatible with such equipment in new diesel engines or after-market equipment, such as particulate filters, installed on older diesel vehicles. Biodiesel is biodegradable and non-toxic. As a result, biodiesel poses minimal concerns related to soil and water contamination. The percentage of biodiesel used in a blend will affect the extent of these benefits."

The selection of biodiesel fuel by boaters is deemed to be less detrimental to air quality than use of conventional fuels. By June 2005, it was estimated that between 100 and 200 people were using biodiesel at Shilshole Bay Marina. Feedback has been positive, especially from a woman who couldn't previously join her husband on their sailboat because she was sickened by diesel fumes. People also reported that they like the biodiesel because it doesn't smell so bad, doesn't make your boat dirty, and is domestically produced to support the U.S. economy. Biodiesel fuel sales since introduction at Shilshole Bay Marina in June 2001 have increased significantly over the years as shown in Table 1.

Table 1 - Biodiesel Fuel Sales at Shilshole Bay Marina Fuel Dock

Year	Approximate Sales (in gallons)
June 2001-2002	1000
June 2002-2003	2600
June 2003-2004	7800
June 2004-2005	15,300

The new marine lube station provides enhancement to water quality over the long-term and promotes cleaner air and reductions in climate-altering greenhouses gasses. There is hope that the education and awareness information will deliver added market development benefits. The promotion of the sale of biodiesel fuel as added to the 2003 BMPs.

b. Water Pollution Prevention BMPs

Several of the BMPs initiated in 2003 exceed regulatory water pollution prevention requirements and demonstrate the Port's creative efforts to assist marina customers and tenants in complying with the water pollution prevention policies. They include the practices outlined below.

1. Compost Worm Bin

In an effort to reduce the amount of kitchen scraps going into the garbage or water, Shilshole Bay Marina staff installed a compost worm bin on site. The use of the compost bin by moorage customers reduces the amount of waste filling the garbage dumpsters and compost can be utilized by local gardeners as mulch.

2. Pea-Patch (P-Patch)

Shilshole Bay Marina staff set aside a piece of land for marina customers on the property for planting gardens (locally known as a P-Patch). Gardeners may utilize compost from the bin for mulch and the presence of the P-Patch enhances the relationship of the moorage customers to the land and promotes additional ownership in the importance of a clean environment.

3. Pet Waste Scooping Stations

Shilshole Bay Marina staff installed pet waste scooping stations at different locations at the marina for use by pet owners. The stations include scoops and plastic bags so pet owners find a convenient way to properly dispose of fecal material. Providing these stations makes it easy to "do the right thing" so that material does not end up in the water illegally.

4. Free Bilge Water Management and Used Oil and Filter Disposal Stations

The marina provides and maintains the sewage pump-out and bilge water pump-out facilities and services free of charge for moorage customers to safely dispose of used oil and dirty bilge water and to prevent spills while fueling boats. The staff at the marina also accept and properly dispose of used oil filters for free.

Porta-potty discharge stations are located on the site and are available free to customers 24 hours a day. In addition, the marina encourages tenants to use the on-shore showers, restrooms and laundry facilities, thereby reducing the amount of soapy water and sewage generated on board.

5. Liveaboard Water Quality Agreement BMP

The Liveaboard Water Quality Agreement was created in 1997 to develop a comprehensive guide for liveaboard residents on BMPs for reducing and eliminating discharges of pollutants from vessels within Shilshole Bay Marina. All "liveaboard" (on your boat) residents must comply with the water quality regulations outlined in the plan in order to reside in the marina. The agreement became part of the new BMPs in 2003.

An agreement is completed by each liveaboard customer which documents the method of sewage disposal; discharge practices for fuel, oil, and chemical products; management of gray water, including dish

washing, showers, laundry and liquid household wastes and management of solid waste disposal (the Marina provides recycle facilities for aluminum, glass, paper, plastic and metals). The agreement also documents the number of pets onboard and asks for information regarding the proper disposal of pet waste. Lastly, the customer agrees to be an advocate for the marina's BMPs and to report spills, accidental discharges and/or unsafe environmental practice to the marina office. Currently, twenty-two liveaboard customers rotate volunteering as dock captain to assist liveaboard neighbors in implementing water quality BMPs. Compliance with this Liveaboard Agreement Water Quality Plan BMP is a requirement for living aboard at Shilshole Bay Marina.

2) Expansion of Solid and Hazardous Materials Reduction & Recycling Effort BMPs

Shilshole Bay Marina generates both solid waste and hazardous waste materials. The marina is a small quantity generator (SQG) of hazardous waste. A SQG business generates less than 220 pounds (about 27 gallons, or half a drum) of hazardous waste per month and accumulates more than 2,200 (about 5 drums) of hazardous waste on site at any time. Shilshole Bay Marina staff included new BMPs that address ways to reduce solid and hazardous waste on site, educate on proper disposal of hazardous materials and expand the list of materials that can be left by marina customers for recycling on site.

a) Increased Signage at Free Disposal Waste Stations

Shilshole Bay Marina provides free hazardous waste collection service, storage and reclamation facility and hazardous waste disposal for moorage customers. Shilshole Bay Marina staff improved and expanded upon the existing signage for designation of solid waste, hazardous waste, garbage and recycling stations on site by posting large and easy-to-read signage at each site. Shilshole Bay Marina staff also developed, posted and continue to monitor "orphan waste" (waste left on docks or otherwise improperly disposed of around facility) as per the policies and procedures.

b) Expansion of Recycled Materials List

While the marina has consistently provided trash dumpsters and recycling containers for aluminum cans, glass, newspaper, tin and some plastics over the years, additional recycling containers were installed upon initiation of the BMPs. Recycling now includes many less-common materials like: antifreeze, batteries, oil, oil filters, flares, and scrap metal, including zincs.

c) Expansion of Non-Toxic Product Use

The staff now follow practices to expand the use of non-toxic products including: 1) Refusing free samples from vendors unless unused portions can be returned; 2) Using an inventory system to streamline product purchasing and to prevent overstock; 3) Asking vendors to provide alternatives to hazardous products and/or writing this into purchasing contracts; and 4) Using no chemical fertilizers, herbicides or insecticides in the maintenance of the landscape areas within the marina. The Seaport Maintenance Landscaping crew uses organic based fertilizers and mulch generated by a recycling process and has been recognized by King County as a "Green Business" for the reduction and recycling of solid waste and for choosing less hazardous materials and products made from recycled content. Also, most pots and planters are open on the bottom and some of what goes in the top discharges out the bottom and into Marina waters. Marina customers are directed not to use any pesticides. If a fertilizer is used, a saucer or other containment under the pot is necessary.

3) Pollution Prevention Education BMPs

a) Staff Education

Shilshole Bay Marina staff provide the education programs for employees at the marina including: 1) Educating employees, including seasonal employees, to assure that accidental spills or contamination are avoided; 2) Including discussion of hazardous waste/pollution reduction and management in routine

meetings, training, and newsletters; and 3) Involving employees in product selection to reduce the introduction of unapproved or more hazardous materials.

b) Marina Customer and Tenant Education

Currently, twenty-two liveaboard customers rotate volunteering as dock captain to assist liveaboard neighbors in implementing water quality BMPs. Dock captains work with the marina staff to educate and resolve problems regarding handling of sewage and other environmental issues.

Additional education and awareness programs are provided to moorage customers and tenants at public events and open houses. Information on availability of proper disposal of materials on site is provided at garbage and recycle stations, posted on marina gates and restrooms and in the BMP document that is provided to each new moorage customer. Shilshole has also held several "Clean Boat Campaign Saturdays with Puget Soundkeeper Alliance.

Shilshole Bay Marina staff also help prevent oil, fuel, cleaners, paints, thinner, soaps and other toxic spills by educating employees and tenants to conduct work in the bermed work area, using secondary containment, oil filter drain, and absorbent booms.

c) Community Involvement and Education

With regards to community involvement, the Port's environmental objectives, initiatives, and programs are communicated to stakeholders, community groups, politicians, and environmental organizations through publications and workshops. The Port regularly attends boat shows, has hosted a "Kick Off" for the National Clean Boating Campaign event including educational booths and demonstrations of clean boating techniques and products as part of the National Clean Boating Campaign Project, presented at conferences

and prepared educational information for new and potential customers to alert them to the requirements of liveaboards and guest moorage and opportunities to participate in ongoing pollution prevention efforts.

Shilshole Bay Marina has been recognized for excellence in pollution prevention by several local programs including: 1) EnviroStars - Shilshole Bay Marina was named an EnviroStar Business by the King County EnviroStars Program in 2003, earning the highest, five-star rating for preventing pollution and reducing hazardous waste. This designation also requires extensive education and marketing as part of the prerequisites; and 2) The Seattle Business and Industry Resource Venture named Shilshole Bay Marina – Port of Seattle a Seattle Green Works members. Such members practice at least three waste prevention strategies, recycle 40% or more and use a minimum of three recycled products.

4) Enforcement of Policies and Guidelines BMPs

Shilshole Bay Marina strives to ensure that the stated BMPs are followed and that the management and disposal of waste is performed in accordance with applicable laws and regulations. The marina customers and tenants are monitored on a quarterly basis for compliance with the BMPs. Failure to comply with the Liveaboard Water Quality Agreement BMP results in termination of the liveaboard and moorage agreement. In addition, the marina staff walks the decks regularly to look for items that should not be there and manage non-compliant activity.

Waters in the vicinity of Shilshole Bay Marina are Treaty-protected "Usual and Accustomed" fishing areas. Fishing activity in these areas is managed by the Muckleshoot and Suquamish Tribes, and the Washington Department of Fish and Wildlife (WDFW). Fishing by Tribal members in this area is consistent with past federal government treaties (the treaties of Point Elliott and Medicine Creek), and subsequent federal court decisions. The quarterly BMP monitoring and enforcement supports compliance with these treaties.

C. Award Criteria

1. **The level and nature of benefits to environmental quality, beautification or community involvement.**

BMPs implemented in 2003 at Shilshole Bay Marina reduce pollution on port property, protect natural resources, improve the quality of the marina life, and reduce costs for cleanup and potential spills. This contributes greatly to the overall environmental quality and goal of zero discharge to air and water.

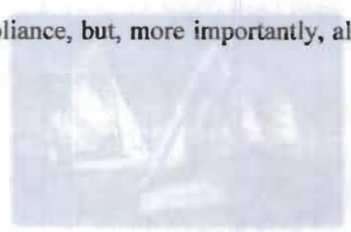
2. **The level of independent involvement and effort by the port.**

While many of the pollution prevention plans at the Port are initiated through compliance with regulatory measures, the 2003 BMPs extended beyond requirements in order to fulfill a vision created by staff and marina customers to help prevent pollution. The BMPs were developed with environmental stewardship, natural resource enhancement, pollution prevention, environmental training/education, and continuous improvement in mind, independent of regulatory agency requirements.

3. **The creativity of the solution or programs**

The BMPs were created based on ideas from the Shilshole Bay Marina customers and tenants. Examples of the creative nature of the BMPs include: 1) the addition of biodiesel as an alternative fuel source, which was initiated by Shilshole Bay Fuel, LLC and supported by the Port through educational and operational measures; and 2) the addition of composting bins and pet waste scoop stations onsite; 3) expansion of the list of recyclable materials onsite; and 4) offering free of charge waste disposal for moorage customers. The

Port's BMPs provide the infrastructure to not only maintain good compliance, but, more importantly, also identify areas to go beyond compliance and enhance the environment.



4. Whether the project or program results are apparent (the project must be complete through some beneficial increment

With the implementation of the Port's BMPs, environmental objectives and targets have been established and there has been success in the education and enforcement programs of the BMPs. Marina customers have expressed positive response to the new BMPs and adherence to the policies. The dock captains have enthusiastically contributed to this success. The site also now receives regularly scheduled pickups of the expanded list of recycled materials, hazardous materials and the bilge and oily water disposal. Another positive result of implementation of the BMPs is the substantial increase in biodiesel product purchased at the fuel dock. The biodiesel product fuel sales have grown substantially from approximately 1,000 gallons sold from June 2001-2002 to approximately 15,300 gallons sold in June 2004-2005. Approximately 100-200 people now fuel with biodiesel, thereby reducing toxic emissions to the air.

5. The cost effectiveness of the activity or the program

One of the benefits of the Port's BMPs is that they establish accountability and clearly define roles and responsibilities, thereby improving the marina's overall performance. This results in avoided costs such as fine and penalty fees, duplication of efforts costs, and project delay costs. Minimal additional costs are required to staff the implementation, education and enforcement of the BMPs as well as fees for the additional waste and contamination disposal and recycling efforts.

6) The transferability of the technology or idea to the port industry

The BMPs initiated at Shilshole Bay Marina demonstrate how ports and their tenants can efficiently and effectively incorporate environmental practices into their marina operations. The BMPs are easily transferable and can be implemented at any other marina, large or small.

IV. Conclusion

Washington residents in the Puget Sound region enjoy a quality of life that's largely due to the state's clean air and water and beautiful mountainous surroundings. Seattle residents understand that protecting the environment is key to preserving the area's coveted sense of place, and many Washington businesses have adopted progressive environmental initiatives. The mindset is that a healthy environment exists through innovative thinking and honoring our quality of life. The Port of Seattle shares this mindset while providing infrastructure and services to residents.

The BMPs implemented in 2003 at Shilshole Bay Marina reduce pollution on port property, protect natural resources, improve the quality of the marina life, and reduce costs for cleanup and potential spills. They reflect the Port of Seattle's dual responsibilities to protect and enhance the environment while continuing to contribute to the regional economy.

SHILSHOLE BAY MARINA
Best Management Practices

The Port of Seattle and Shilshole Bay Marina are committed to preserving and enhancing the environment through proper management of all activities that occur at this facility. Given this commitment and in accordance with the Department of Ecology rules, United States Coast Guard regulations, and the Federal Clean Water Act, we have established these Best Management Practices in the hope that they will ensure the continued safekeeping of our harbor and marine environment. Marina staff are available to assist customers 24 hours/day, 7 days/week. Shilshole Bay Marina has been named an "EnviroStar Business," earning the highest five-star rating for preventing pollution and reducing hazardous waste.

I. Bilge Water Management and Used Oil Disposal

Oily bilge water that is not contaminated by soaps, cleaners or engine coolant and is less than 50 gallons may be pumped via the bilge pump located at the end of the Central Pier free of charge, 24 hours/day. For quantities over 50 gallons, we request that the boat owner contact a private company to remove the bilge water. Please contact the Marina Office on VHF Channel 17 for access to the bilge pump out station. See additional contact information at the end of this document.

- The discharge of contaminated bilge water is illegal. Do not discharge bilge water that is contaminated with oil, detergents, engine coolant or bilge cleaners. The fine for discharging oil from your bilge can be as high as $20,000 per day/per violation. Use oil absorbent bilge pads or pillows in your vessel's bilge to soak up oil and fuel. This discharge is toxic to marine life.
- To prevent contamination of bilge water, do not drain oil into bilge. Fit a tray underneath the engine to collect drips. Use pads in the pan to make clean up easier. Keep the bilge area as dry as possible. Fix all fluid leaks in a timely fashion. Inspect fluid lines and hoses for chaffing, wear and general deterioration. Clean bilge areas after engine maintenance work. When changing engine oil, wipe up any spills.
- Dispose of oil soaked absorbents when they are fully absorbed by wrapping in newspaper and then double wrapping in plastic and placing in the trash. ***The staff at the marina can also handle disposal of oil filters.***
- Keep engines tuned and operating at peak efficiency. Keep the use of engine cleaners to a minimum.
- Oil recycle stations are located in several convenient locations in the marina and are free of charge to moorage customers. Please contact the Marina Office or call VHF Channel 17 for disposal instructions.

II. Fueling Practices

A full-service fuel station is located at the Central Pier and is open 7 days a week from 9:00 to 4:30 PM, except in the Summer when the hours are from 8:00 to 8:00 PM.

- All fueling must take place at a fuel pier. Avoid topping off your fuel tanks. Estimate the amount of fuel needed prior to filling your tank. Always have absorbent materials on hand and at the ready before fueling. Catch any spills with an absorbent pad or container. Do not use detergents on fuel/oil spilled in the water. Detergents disperse spills, but do not eliminate them and the combination is more harmful to the environment than the fuel/oil alone. Never leave fuel nozzles unattended.
- Oil absorbent pads are available at the fuel dock store.

Notice to Boaters: Most diesel engines can run Biodiesel with little or no modification and your engine will run cleaner and with less wear and tear in the process. Available at Shilshole Bay Fuel dock.

III. Hazardous Chemicals, Cleaners and Wastes

Shilshole Bay Marina will provide for proper disposal of your (household or boater-generated) hazardous waste. Contact the Marina staff on VHF Channel 17 for disposal. 24-hour service is available. For commercial vessels, a list of disposal service providers is available from the King County Yellow Book Waste Directory www.metrokc.gov/hazwaste/yb/. See additional contact information at the end of this document.

- Hazardous or flammable chemical/materials are not allowed to be stored in dock lockers or on the dock. Materials stored on the vessel should be covered and secured inside secondary containment. Try not to store hazardous or flammable materials on the vessel in case of a fire or sinking vessel.
- Disposal of used oil, antifreeze, paints, solvents, varnishes, gas cylinders, preservatives and batteries in the garbage is prohibited. These materials are not to be discharged to the sanitary sewer or to marine waters. Do not dispose of these wastes in the Marina dumpsters and do not leave these wastes on the dock or in the dumpster areas without notifying the marina office. Call us and we will assist you with proper disposal.

IV. Spill Prevention and Response

Should a spill occur on or from your vessel, immediately stop the spill or leakage source and contain the spill. Report the spill immediately to the U.S. Coast Guard National Response Center at 1-800-424-8802 and the Department of Ecology at 1-800-OILS-*911or*

1-800 258-5990. Please contact the Marina Office or call VHF Channel 17 for assistance. See additional contact information at the end of this document.

- Have a supply of absorbent materials on board your vessel. Used absorbent materials should be wrapped in newspaper, double wrapped in plastic and disposed of in the trash dumpster.

- Do not use detergents or soaps to clean up spills. Oil and detergents are toxic to fish and other marine life. Do not use detergents on fuel/oil spilled in the water. Detergents disperse spills, but do not eliminate them and the combination is more harmful to the environment than the fuel/oil alone.

V. Solid Waste

Trash dumpsters and recycling containers for aluminum cans, glass, newspaper, tin and some plastics are available near the head of each dock in the recycling/garbage areas. This service is available 24 hours/day and at no cost to the customer. Aluminum other than cans, bronze, brass and stainless steel are recycled by the Liveaboard Association. Contact list is available at the end of this document. A compost "worm bin" is located next to M-5 restrooms for recycling of kitchen scraps or newspaper. It is prohibited to throw any garbage into the water or on the land.

Notice to Boaters: A treaty known as the Marine Pollution Act (MARPOL) specifically prohibits the dumping of any plastics from any vessel anywhere in the ocean, or in our navigable waters, and restricts the dumping of all other types of refuse from boats.

If your boat is over 40' you are required by MARPOL to have a written waste management plan onboard. t must contain – name of the vessel; person in charge and; a short description of what you plan to do with your waste.

The Coast Guard requires all boats over 26 feet to display the MARPOL placard in a visible location.

VI. Sewage and Gray Water Management

Sewage pump out facilities and porta-potty discharge stations are located at the end of the Central Pier and the northwest face of lower "A" pier along the seawall and are available free to all customers 24 hours/day. Shore-side restrooms, showers and laundry facilities are available for use 24-hours, 7 days per week. We encourage the use of shore-side facilities to reduce gray water generation. Pet waste scoop dispensers are located throughout the facility.

- The discharge of sewage or black water is prohibited. Pump-out facilities and port-a-potty discharge stations are located at the end of the Central Pier and at the northwest face of lower "A". Effective January 1, 2004, the use of Marine Sanitation Devise (MSD) I and MSD II will not be allowed while a vessel is moored or navigating within the Marina. See definitions of Marine Sanitation Devises below.

- Pet waste may be a substantial source of fecal contamination to the waters of Shilshole Bay. All pet waste must be promptly removed and properly disposed of in the garbage.

- Gray water discharge from sinks, dishwasher, laundry and showers may be harmful to aquatic life within the marina and contains bacteria in sufficient quantities to be a public health concern. Vessel owners are encouraged to utilize: a) a pump out service (see marina office for references), b) contain gray water and use self pump out stations located at Central and Pier A in the marina, or c) use shore side facilities located throughout the marina. Showers are available shore side. Boaters are encouraged to minimize the generation of gray water onboard and to utilize land side facilities. If using onboard showers, boaters should contain the gray water and dispose of it at the pump out stations.

- The discharge of laundry water from a commercial vessel is prohibited. Laundry facilities are provided shore side for commercial and recreational vessels.

- Use sink screens or strainers and dispose of strained waste in the garbage.

Notice to Boaters: Baking soda, vinegar, lemon juice and vegetable oil are far less harmful than conventional cleaning products, however, they are still foreign elements to the marine environment and should be treated as such. Use minimal amount needed to do the job and as practical, do not discharge into the water.

VII. Repair and Maintenance Activity

In-Water Hull Cleaning

The metals in the paint wastes generated by in-water hull cleaning adversely impact the water quality, aquatic organisms and sediment quality. A full service boat yard and engine repair facility are located at the south end of the Marina and operated year round. Extensive repair work and bottom cleaning must occur in a commercial and permitted boatyard or shipyard.

- Washington State Department of Ecology and the Department of Natural Resources have determined that cleaning of vessels painted with sloughing and ablative anti-fouling paints and tin compounds (soluble "soft paints") while the vessel is afloat is

prohibited by state law. Regulations also prohibit the use of mechanical or hydraulic devices for in-water hull cleaning. The April 1999 Washington State Department of Natural Resources Environmental Advisory for commercial divers is posted at the marina and a copy available in the marina office. This advisory restricts the cleaning of vessels with "soft paints" but is does not restrict in-water hull maintenance such as propeller, rudder, or prop shaft repair and hull surveys following charter service. Sacrificial anode zinc replacement is also allowed provided the worn zinc is recycled.

- In-water hull cleaning is allowed for vessels not painted with a sloughing or ablative paint. However, during the cleaning process, any turbidity, oil sheen or discoloration to the receiving water is considered a violation of DOE Standard RCW 90.48 and is prohibited. Due to the potential for pollution, Shilshole Bay Marina strongly recommends that all hull cleaning be conducted in a permitted boatyard where contaminants are treated and disposed of properly.

Minor Repairs and Maintenance -- Slip-Side Maintenance

- Painting, scraping and refinishing of boats in the water is limited to minor touch-ups. Minor touch-ups include a small area on the superstructure, deck and hull above the waterline that requires repair for mostly cosmetic purposes. Extensive repair work and bottom cleaning should occur in a commercial, permitted boatyard or shipyard.

- Any minor painting, scraping and refinishing must be contained and all debris collected. All paint mixing must be done with the can placed inside additional containment that will catch spillage. Paint cans used shall be no larger than one-gallon in size. Minor painting and sanding is allowed on the interior and superstructure of the vessel. Placing a tarp over the work area is required to prevent any release of sanding debris or paint to the marine environment. The tarp should prevent releases as well as run off from rain. Assistance with containment provisions is available in the marina office.

- Repair activity is not allowed on the dock. A dock box is provided at each slip for storage of equipment and supplies. Hazardous waste and hazardous material storage is not allowed in the locker boxes or on the dock at any time.

- Clean water under pressure may be used to remove salt from the outside of the vessel; however, any turbidity, oil sheen or discoloration to the receiving water is a violation of DOE Standard RCW 90.48 and is prohibited.

VIII. Boat Hoist/Dry Boat Moorage Areas

The drains in the boat hoist area drain directly into the marina waters and the metals in the paint wastes generated by hull cleaning adversely impact the water quality, aquatic organisms and sediment quality. The Washington State Department of Ecology and the Department of Natural Resources have determined that cleaning of vessels painted with sloughing and ablative anti-fouling paints and tin compounds, (soluble "soft paints") will produce an illegal discharge if released to the water. If your vessel is not painted with a sloughing or ablative pain, hull cleaning is not prohibited by the Washington State Department of Ecology, however, during the cleaning process, any turbidity, oil sheen or discoloration that is discharged (via the storm water basins) to the receiving water is a violation of DOE Standard RCW 90.48 and is prohibited. This potential for pollution and potential violation of the State law has lead Shilshole Bay Marina to strongly recommend that all hull cleaning be conducted in a permitted boatyard, where contaminants are treated and disposed of properly.

- Maintenance and repair activity, including the washing of boats, trailers or any vehicle on land at the marina facility is not permitted. Storm water basins in the parking lot discharge directly into marina waters and do not filter or treat contaminants that could be released due to this activity.
- Do not use soap. All soaps and detergents, even the biodegradable soaps are considered pollutants and are illegal. No cleaner meets the legal requirements to enter our waterways (Water Pollution Control Law, RCW 90.48.080).
- Storage of hazardous wastes or hazardous materials, including paints, cleaners, degreasers, and gasoline is not allowed in the dry moorage area.

IX. Vehicles

- Maintenance of vehicles in the parking lot is not allowed. Painting, engine or transmission removal is prohibited. Vehicles that leave significant amounts of fuel, oil, or transmission fluid in the parking lot are prohibited and may be towed at the owner's expense.

- No car washing is allowed at the Marina. All parking lot drains discharge to the Marina waters. Use a commercial car wash facility that recycles the contaminated water.

X. Pesticides and Fertilizers

No chemical fertilizers, herbicides or insecticides are used in the maintenance of the landscape areas within the marina. The Seaport Maintenance Landscaping crew uses organic based fertilizers and mulch generated by a recycling process. King County recognizes the

SHILSHOLE BAY MARINA
Best Management Practices

Landscape Crew and Shilshole Bay Marina as a "Green Business" for the reduction and recycling of solid waste and for choosing less hazardous materials and products made from recycled content.

- Most pots and planters are open on the bottom and some of what goes in the top discharges out the bottom and into Marina waters. Do not use any pesticides. If a fertilizer is used, a saucer or other containment under the pot is necessary.

Please contact the Marina Office to report any spill, discharge or other unsafe practices. Boater information, directories and guides are available in the Marina Office.

Marina Office Hours – 8:00 to 4:30 PM Monday – Friday 8:00 to 1:00 PM Saturdays

Office Hours Phone: (206) 728-3006/After Hours Phone: (206) 601-4089

VHF Channel 17 monitored 24 hours/day – 7 days/week

Sewage Handling Disposal. Discharge of untreated sewage anywhere within the waters of Puget Sound, including Shilshole Bay Marina waters, is prohibited by law (Federal Water Pollution Control Act, 33 USC 1322; Washington State Water Pollution Control Act, Chapter 90.48 RCW, and other federal, state, and local laws and regulations). Discharge of treated sewage *(from MSDs Type I and II)* in Shilshole Bay Marina **will not be allowed after January 1, 2004 as per the moorage agreement.** ***The definitions for Marine Sanitation Devices (MSD) are as follows:***

Type I: a device that relies on maceration and disinfecting for treatment of the waste prior to its discharge into the water. The standard in 33 CFR Secs. 159.123 and 159.125, is that the effluent has a fecal coliform bacterial count not greater than 1,000 per 100 milliliters and no visible floating solids.
Type II: a device that is similar to the Type I; however, the Type II device provides an advanced form of the same type of treatment and discharges wastes with lower fecal coliform counts and reduced suspended solids. The standard described in 33 CFR Secs. 159.126 and 159.126(a), is that the effluent has a fecal coliform bacteria count not greater than 200 per 100 milliliters and suspended solids not greater than 150 milligrams per liter.
Type III: a device that is designed to prevent the overboard discharge of treated or untreated sewage or any waste derived from sewage. Type III MSDs are commonly called holding tanks because the sewage flushed from the marine head is deposited into a tank containing deodorizers and other chemicals. The contents of the holding tank are stored until it can be properly disposed of at a shore side pump facility.

METHOD OF SEWAGE HANDLING (TO BE COMPLETED BY NON-LIVEABOARD WET MOORAGE CUSTOMERS)

I use the following method of sewage disposal on my vessel: (Please initial one)

Initial ___The vessel has no head (toilet). I only use shore side facilities.

Initial ___ The vessel has a working porta-potty that is dumped at the discharge stations located on Central Pier and the north end of lower A-dock.

Initial ___ The vessel has a working Type III Marine Sanitation Device (MSD III), that is pumped out regularly at the self-service pump out station. Self-service pump out stations are located on A-dock and the Central Pier.

Initial ___ The vessel has a working Type III Marine Sanitation Device (MSD III), that is pumped out regularly by a pump out service provider. (Contact the Marina Office for sources.)

Initial ___ The vessel has a working USCG certified Type III MSD that I do not use. I use shore side facilities only.

Initial ___The vessel has a working Type I Marine Sanitation Device (MSD I). I understand that the MSD I will no longer be allowed as a method of sewage disposal while in Shilshole Bay Marina after 01/01/04 as a condition of moorage.

Initial ___ The vessel has a working Type II Marine Sanitation Devise (MSD II). I understand that the MSD II will no longer be allowed as a method of sewage disposal in Shilshole Bay Marina after 01/1/04.

I/we have read and will adhere to these Best Management Practices and will help Shilshole Bay Marina achieve the goal of zero discharge to the environment.

Moorage Customer Name(s):

_____

SHILSHOLE BAY MARINA
Best Management Practices

Please Print Please Print

Signature(s): _____

Date: _____