

ENVIRONMENT

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Introduction

In the standard lease agreement with Harbour Authorities, Small Craft Harbours (SCH) has certain pollution prevention requirements that are compulsory for Harbour Authorities. SCH works together with Harbour Authorities to help reduce the harmful effects of harbour operations on the environment. For example, Harbour Authorities, with the assistance of SCH, are required to develop an Environmental Management Plan to help ensure that harbour operations do not affect the environment adversely in the long term. SCH also conducts numerous Environmental Assessments each year to identify and mitigate potential environmental effects of SCH harbour development projects on the environment.

SCH recognizes the care Harbour Authorities take in environmental stewardship. The National Harbour Authority Environmental Stewardship Prix d'Excellence is an award that recognizes Harbour Authorities who have produced a measurable, positive, change and who have succeeded in reducing environmental problems at their harbours. More about the Harbour Authority Recognition Program can be found on the SCH website at <http://www.dfo-mpo.gc.ca/sch-ppb/recognition-reconnaissance-eng.htm>.

COMMON SOURCES OF POLLUTION

There are a number of common sources of pollution in a small craft harbour. Oily bilge water and fuel spills, fish wastes, paints and antifoulings, can all harm the environment and marine life and thus harm the fishery. Harbour Authorities must take a systematic approach to addressing each of these sources of pollution.

ENVIRONMENTAL LEGISLATION

SCH facilities are federal facilities. Thus, Harbour Authorities and others operating on SCH properties must comply with federal environmental legislation in addition to the applicable provincial, territorial, and municipal environmental requirements.

The key federal environmental requirements are summarized below. Web links to the official version of the regulations are also provided, but Harbour Authorities may also contact the local SCH office to request hard copies. Harbour Authorities should keep a set of these documents for reference purposes.



1. The ***Fisheries Act***¹ prohibits harmful substances of any type to be deposited in waters frequented by fish. Authorization is required from Department of Fisheries and Oceans (DFO) for any activity that may result in the “harmful alteration, disruption, or destruction” (HADD) of fish habitat. Violations of the *Fisheries Act*² carry fines of up to \$1 million.

<http://laws.justice.gc.ca/en/F-14>

2. The ***Canada Shipping Act, 2001*** generally prohibits the discharge of garbage into Canadian internal waters and provides specific requirements for discharge of garbage elsewhere in the oceans applicable to all ships in Canadian waters and to all Canadian ships everywhere. Discharging sewage is also prohibited in certain Canadian waters according to the *Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals* under the Act.

<http://laws.justice.gc.ca/eng/C-10.15>

3. The ***Marine Liability Act*** makes vessel owners responsible for responding to spills involving their vessel and may hold them responsible for covering all associated cleanup costs under certain circumstances.

<http://laws.justice.gc.ca/en/M-0.7>

4. The ***Canadian Environmental Protection Act***³ (CEPA) requires that permits be issued for dumping contaminated and harmful substances (including dredged sediments) into Canadian waters. Under the Act the release of a toxic substance to the environment must be reported. All necessary precautions to avoid accidental spills must be taken; in the event of a spill, an emergency spill response should proceed. A list of hazardous substances that are used on site and that are likely to contaminate the environment if spilled should be created. The Act contains several regulations related to environmental protection on federal land including:

- *The Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*
- *The Federal Halocarbon Regulations*
- *The Disposal at Sea Regulations*

<http://laws.justice.gc.ca/en/C-15.31>

For more information please refer to A Guide to Understanding the Canadian Environmental Protection Act⁴, 1999, published by Environment Canada available at:

<http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=E00B5BD8-1>

5. The ***Canadian Environmental Assessment Act*** (CEAA) requires that the environmental effects of a project be considered before making a commitment to carry out the project. Proposed physical work on SCH property may require an environmental assessment under the CEAA. Please refer to Projects, section 3 of this chapter, for more information.

<http://laws.justice.gc.ca/en/C-15.2>

^{1,2} Please note that these requirements are subject to change as of May 2012.

^{3,4} Please note that these requirements are subject to change as of May 2012.

6. The ***Navigable Water Protection Act*** (NWPA) prohibits the discharge of all waste or material that would impair navigation in navigable waters. Approvals are required for works that may impair navigation in navigable waters.

<http://laws.justice.gc.ca/en/N-22>

7. The ***Species at Risk Act*** (SARA) seeks to prevent wildlife species from becoming extinct and to secure the necessary actions for their recovery. The Act contains a list (Schedule 1) of species to which the law applies and which receive full protection (including defining their residences and critical habitats).

<http://laws.justice.gc.ca/en/S-15.3>

8. The ***Transportation of Dangerous Goods Act*** (TGDA) regulates the transportation of dangerous products by air, sea, rail and road. The Transportation of Dangerous Goods Regulations, adopted by all provinces and territories, establishes the safety requirements for the transportation of dangerous goods.

<http://laws.justice.gc.ca/en/T-19.01>

9. The ***Hazardous Products Act*** requires employers to provide information about hazardous materials used in the workplace.

- Containers for hazardous material must have cautionary labels affixed.
- Material Safety Data Sheets (MSDS) must be supplied for all hazardous materials.
- All employees must be educated on the Workplace Hazardous Materials Information System (WHMIS).

<http://laws.justice.gc.ca/en/H-3>

10. Building construction or fixed assets must meet ***National Building Code of Canada*** and the ***National Fire Code of Canada***.





Environmental Management at Harbours

REQUIREMENTS OF THE HARBOUR AUTHORITY LEASE

In the Harbour Authority Lease with Department of Fisheries and Oceans, the Harbour Authority agrees to comply with Federal environmental legislation and applicable Provincial, Territorial and Municipal environmental legislations, regulations, rules or guidelines.

The mechanism for doing this is a written Harbour Environmental Management Plan. This plan should contain enforceable environmental rules for harbour users and environmental best management practices. It should also contain a way of reporting on progress.

The Environmental Management Plan is not something cast in stone; it should be periodically reviewed and updated to suit how harbour operations change with time. SCH regional office is responsible for ensuring that Harbour Authorities develop and implement an Environmental Management Plan and for assisting them in that task.

Currently most SCH harbours have an Environmental Management Plan in place. It is important for Harbour Authorities to review the effectiveness of this document periodically and make changes as required to improve its usefulness.

HARBOUR AUTHORITY RESPONSIBILITIES IN ENVIRONMENTAL MANAGEMENT

Harbour Authorities must assign specific responsibilities to specific persons to address a particular environmental issue. In general, Harbour Authorities should:

- Develop, endorse, post, and abide by a Harbour Environmental Policy;
- Monitor compliance with applicable environmental legislation;
- Develop and enforce Harbour Environmental Rules;
- Communicate environmental information and requirements regularly to harbour users;
- As part of regular business, monitor harbour activities daily;
- Develop a procedure to manage cases where harbour users do not follow the Harbour Environmental Rules;
- Discuss environmental management at Harbour Authority meetings;
- Follow-up on all environmental items in a timely fashion; and,
- Always set a good example in environmental management.



ENVIRONMENTAL MANAGEMENT PLAN

BENEFITS

Having an Environmental Management Plan helps Harbour Authorities with:

- Ensuring compliance with Canadian environmental laws;
- Minimizing environmental clean-up costs;
- Ensuring sustainable operations and reducing user costs and fees; and,
- Promoting “due diligence”.

An Environmental Management Plan does not create any new regulations. It is simply a summary and a guide to help a harbour comply with existing regulations that apply to harbour operations.

The Environmental Management Plan also helps avoid enforcement actions and helps Harbour Authorities maintain good relations with the neighbouring public.

The following sections describe how an Environmental Management Plan is written, enforced, reported on, and revised.

DEVELOPMENT

Because harbours vary greatly, each harbour has a unique set of environmental characteristics. The Environmental Management Plan will vary in length and complexity depending on the size of the harbour and the nature of operations at the site. For that reason, there is no universal Environmental Management Plan.

SCH has developed a number of model Environmental Management Plans at the regional level which consider local conditions. Harbour Authorities should contact their local SCH office for information on model Environmental Management Plans customized for their region and then can further customize as necessary to accommodate specific situations.

The following is neither a complete list, nor will all items be needed for every harbour. It is simply a list of common elements of a typical Environmental Management Plan at SCH.

1. **Harbour Environmental Policy:** This is the first step of an Environmental Management Plan. It is a short statement of intentions in relation to environmental management at the harbour that provides a justification for the development of the rest of the Environmental Management Plan.

Annex 1 provides a sample Harbour Environmental Policy.

2. **Harbour Environmental Rules:** Harbour Environmental Rules form the core part of the Environmental Management Plan. The Rules should be attached to berthage agreements and indicate that harbour users must conduct all tasks in accordance with all applicable environmental legislation and those Best Management Practices that the Harbour Authority has decided to make compulsory. The Rules ensure that daily operations at the harbour respect environmental regulations. Having formal rules for harbour users minimizes the environmental liabilities of the Harbour Authority.

Annex 2 provides sample Harbour Environmental Rules.

3. **Best Management Practices:** Where the Harbour Environmental Rules are compulsory for harbour users, the Best Management Practices need not necessarily be compulsory unless the Harbour Authority has decided to make them so. Rather, they describe the best way of conducting certain tasks. They are highly recommended and should be promoted by the Harbour Authority to the harbour users. Best Management Practices are practical and affordable solutions designed to reduce and prevent pollution.

As an example, the following are some Best Management Practices:



Harbour Cleanliness - Best Management Practices

- Schedule routine property cleanup to minimize pollutants getting into the water;
- Ensure correct waste / recycling management disposal containers are provided for use on site;
- Empty trash / recycling containers before they are full;
- Ensure fishing gear and equipment is stored neatly, don't allow unwanted equipment on harbour property;
- Do not burn wastes in open areas or without a municipal permit (Note: In some provinces it is illegal to burn waste/garbage);
- Pick up and dispose of litter floating in the harbour, on harbour structures or on the upland. Dispose in appropriate waste management container (e.g. Garbage, Recycling, Refundable, Compost); and,
- Investigate foul odours, visible emissions (smoke), or noise that would be unpleasant to neighbours.

Annex 3 provides sample Best Management Practices for the most common sources of pollution at SCH. If a Harbour Authority notes a new problem for which a Best Management Practices does not already exist, they can create a new Best Management Practices using the Environmental Target Table procedure described below.

In all cases, if a Harbour Authority notes a problem for which the correct response is unclear, they should contact their SCH office for assistance.

Some of the Best Management Practices may have costs associated with them, but this small cost is justified when compared to the time, effort, and cost involved in cleaning up the contamination caused by poor environmental practices. The cost of environmental clean-up can easily range from \$15,000 to over \$1M, depending on the volume of contaminated material and disposal site options.

4. **Environmental Target Table:** An Environmental Target table is a tool suitable for larger harbours where many sources of pollution exist. It helps the Harbour Authority to prioritize observed problems and then tackle them in a systematic way.

SCH recommends an Environmental Target Table, but recognizes that it may not be necessary in all cases. At smaller harbours, where environmental issues are well understood, Harbour Authorities can likely address all environmental requirements using Harbour Environmental Rules and Best Management Practices alone.

To fill in the table, Harbour Authorities need to know the potential sources of pollution. Some of these are found in **Annex 3** (*Common Sources of Pollution and Best Management Practices*), but there may be others as well. Simply observing harbour operations will generally lead the Harbour Authority to a good understanding of potential pollution sources. If required, Harbour Authorities can always contact their local SCH Office, other local Harbour Authorities, or an environmental consultant for technical assistance.

The seven steps for developing the Environmental Target Table are:

- (1) Select a goal or target based on observed pollution problems.
- (2) Prioritize these goals according to the following **Environmental Priority Ratings**:

1	<ul style="list-style-type: none"> • Known non-compliance with a Federal Act or other applicable environmental legislation OR • A finding which has a damaging and possibly irreversible negative impact to the environment.
2	<ul style="list-style-type: none"> • Potential non-compliance with a Federal Act or other applicable environmental legislation OR • A finding which has a negative impact to the environment that may be of a repetitive or cumulative nature.
3	<ul style="list-style-type: none"> • Known or potential non-compliance with a Best Management Practices OR • A finding, although not a regulatory breach, which has a minimal harmful effect to the environment that requires response as soon as funding and time permit.
- (3) Select or develop a Harbour Environmental Rule or Best Management Practices to address the source of pollution.
- (4) Develop a cost estimate for implementation of the Harbour Environmental Rule or Best Management Plans and thus addressing the pollution problem.
- (5) Create a realistic deadline for solving the problem.
- (6) Monitor implementation to ensure deadlines are met.
- (7) Revise the table annually to incorporate new problems as they crop up and remove from the table those problems which have been resolved.

Annex 4 provides a sample Environmental Target Table.

IMPLEMENTATION

Environmental Representative: To be effective in managing environmental issues at a harbour, Harbour Authorities should appoint someone to be the Environmental Representative. This person is responsible for ensuring awareness of environmental issues amongst the harbour users. This person's qualifications should meet the following criteria:

- Proven knowledge of environmental issues at a harbour or similar facility;
- Excellent communication and organizational skills; and,
- Reliable and trustworthy.

General Awareness and Formal Training: To ensure environmental awareness, both the Harbour Authority and SCH should provide formal training and less formal communication on environmental subjects. Training associated with the Environmental Management Plan should consist primarily of review and general familiarization with the Environmental Management Plan.

- The Harbour Authority should ensure that the Environmental Representative is familiar with all aspects of the Environmental Management Plan.
- The Environmental Representative should in turn ensure that all harbour users, contractors, and the general public are aware of the Environmental Management Plan, especially the Harbour Environmental Policy and Harbour Environmental Rules.

Harbour Authorities should communicate relevant environmental regulations and rules along with the other more general harbour rules to harbour users. Harbour users, contractors, and the general public must be aware of what the Harbour Authority expects of them. Harbour Authorities can communicate information in many ways:

- (1) Documents
 - Harbour Environmental Policy;
 - Harbour Environmental Rules;
 - Best Management Practices; and,
 - Harbour Newsletters, Bulletins, and Brochures.
- (2) Signs
- (3) Media
 - Local and community news.
- (4) Formal Education
 - Workshops and presentations.

Depending on the size of the harbour and the nature of operations, additional training may be required. Additional training may be offered by SCH, DFO, and/or Environment Canada. Please contact your local SCH office for more information.

Regular Environmental Inspections: Harbour Authorities should monitor harbour activities daily. If an infraction of the Harbour Environmental Rules has been committed, follow the procedure for enforcement of the rules that was developed in the Environmental Management Plan.

In addition, Harbour Authorities should conduct formal, periodic, Environmental Inspections of the harbour property and buildings to identify new or emerging problems. In conducting these inspections, Harbour Authorities should:

- Record all observations in writing and by photograph if possible;
- Review the observations and rank the findings; and,
- Look for patterns and chronic problems.

Note: This type of information from regular environmental inspections is very useful when preparing an Environmental Target Table.

SCH recommends a formal Environmental Inspection of Class A and B harbours every month during the time the harbour is operational; this may be less frequent at class C and D harbours.

See **Annex 5** for a sample checklist for Environmental Inspections.

Reporting Pollutant Spills: There are mandatory Federal and Provincial legal requirements around reporting spills of hazardous materials in the water or on land. The Environmental Management Plan is a convenient place to include specific information on reporting pollutant spills in the area where the harbour is located. In general terms:

- All accidental releases of a contaminant under the control of the Harbour Authority must be reported to the local authorities (police and/or fire department) and provincial authorities (Note: Some Provinces have handy 1-800 numbers for spill reporting—these are located in Annex 6 for convenience).
- A spill-reporting procedure must be in place and periodically field-tested in accordance with applicable regulations—the Environmental Management Plan is a good place to put this information.
- The local SCH office must be immediately informed of reportable incidents.

Note: If the source of the spill is a federally regulated storage tank, Harbour Authorities must refer to the tank-specific Emergency Plan.



ENFORCEMENT

An *Environmental Infraction* is a breach of an environmental regulation or Harbour Environmental Rule. Individuals who see an environmental infraction should notify the Harbour Authority and describe the situation. When confronted with a report of an infraction, Harbour Authorities should consider an escalating approach similar to the following:

- a) A Harbour Authority official should speak with the person reported to have committed the infraction and allow the person an opportunity to explain. If it truly is an infraction, then the Harbour Authority official should refer the person to the Harbour Environmental Rules and remind them that there are consequences for infractions (e.g., fines and/or loss of berthage privileges).
- b) Second-time offenders should receive written warning from the Harbour Authority. All the Harbour Authority members should participate in finding a solution. The Harbour Authority should keep a copy of the decision on file.
- c) Use legal recourse as a last alternative (owe to the cost and time required to solve a problem in this way).

If warranted, it is the responsibility of the Harbour Authority to contact the appropriate government agency having jurisdiction and authority to enforce applicable environmental legislation (e.g. the authorities listed in Annex 6) at any step in this process.

RECORD-KEEPING

General Requirements for Record-Keeping: Proper maintenance of records ensures that Harbour Authority members, users, and contractors have access to the most current environmental documents. Environmental documents distributed at the harbour should clearly show the date, version number and revision date (if applicable).

More information on general record-keeping is provided in Governance Section of this manual.

Regulatory Requirements for Keeping Environmental Records: The Canadian approach to environmental regulation relies heavily upon record-keeping and reporting to prove compliance. These requirements generally apply to the owner of a regulated system such as a fuel tank system or refrigeration system. This may not necessarily be the Harbour Authority.

Canadian environmental regulations often require certain documents to be kept for five years; however, some must be kept indefinitely. Record-keeping requirements also exist for certain activities which take place on site such as hazardous waste handling.

Harbour Authorities must become familiar with all the regulatory record-keeping requirements pertaining to their operations and should develop standardized forms to address the requirements. If required, Harbour Authorities can contact their local SCH office, another local Harbour Authority, or an environmental consultant for technical assistance.

REPORTING ON SUCCESS

Annual Environmental Report: Harbour Authorities should prepare an Annual Environmental Report (AER) for the Harbour. Harbour Authorities should then distribute this report to the local SCH office and to all Harbour Authority members at the end of each fiscal year.

The following represents a suggested Table of Contents for the Annual Environmental Report.



- Environmental Management Plan Progress Summary (approx. one page)
- Copies of Environmental Inspections
- Last year's Environmental Target Table (if applicable)
- Next year's Environmental Target Table (if applicable)
- Funding requests for environmental issues in order of priority.

Environmental Compliance Audits: The Federal Government is required to inspect its own facilities and report on progress in environmental matters. This requirement for inspections applies to fishing harbours that DFO leases to Harbour Authorities. These inspections are called audits, but they are not financial audits.

Some of these audits are initiated by DFO itself under a national environmental compliance audit program. These audits are conducted at selected DFO facilities, which can include fishing harbours. Generally, DFO hires expert external consultants to assess and report on overall environmental compliance at each audited facility.

Other audits are initiated by Environment Canada, who may also inspect harbour facilities to check for compliance with all provisions of the *Canadian Environmental Protection Act*⁵.

SCH also may conduct environmental compliance audits and/or inspections and reserves the right to access the property under the lease agreement.

Finally, if the complexity of operations at the harbour warrants it, Harbour Authorities could consider arranging their own external environmental compliance audits. Such audits would be important if there are several third-party commercial operations at the harbour (e.g. a fish processing company, a boat repair and maintenance firm, a fuel dispensing company, etc.). Harbour Authorities can contact their local SCH office for assistance in writing Terms of Reference for this type of audit, if they wish.

⁵ Please note that these requirements are subject to change as of May 2012.

KEEPING PLAN UP-TO-DATE

Every year, Harbour Authorities should make sure that environmental documents are up to date. Harbour Authorities can contact federal, provincial, and municipal agencies by telephone or visit web sites to check if regulatory documents are up to date. The local SCH office will also provide Harbour Authorities with updates on new federal regulatory requirements upon request.

Every three years, or following an environmental incident, Harbour Authorities should review their Environmental Management Plan and consider modifications to it. This should include a review of records kept since the last revision (e.g., minutes of meetings, comments from users, SCH assessments, recommendations from regulators, and results of any environmental inspections and audits) to see if certain problems keep coming up. Recurring problems can be addressed via a new Harbour Environmental Rule or an updated Best Management Practices, and so forth.

In general, Harbour Authorities should always:

- Maintain the master copy of the Environmental Management Plan;
- Be familiar with the record-keeping requirements pertaining to harbour operations;
- Maintain a filing system for all environmental documents and make sure that all environmental documents have the date and a version number on them; and,
- Collect and throw out old versions of the documents and replace them with new versions.





ANNEX 1 – SAMPLE HARBOUR ENVIRONMENTAL POLICY

SAMPLE HARBOUR ENVIRONMENTAL POLICY

1. Ensure the long-term viability of the harbour by operating in a sustainable manner in accordance with applicable environmental legislation.
2. Ensure that the Harbour Authority Environmental Management Plan is maintained and communicated.
3. Ensure harbour users and contractors abide by applicable environmental legislation and Harbour Environmental Rules and promote Best Management Practices.
4. Strive to prevent pollution, provide reception facilities for all wastes and recyclables, and keep the harbour clean.
5. Monitor harbour activities that impact the environment and address the negative environmental impacts associated with harbour operations.
6. Set environmental targets and continually improve environmental performance.
7. Invest resources in environmental initiatives (posters, training, pollution prevention, etc).
8. Give consideration to interested parties that contact the harbour regarding environmental issues and make this policy available to the public upon request.

ENDORSEMENT:

DATE:

_____ (INSERT HARBOUR AUTHORITY NAME HERE)
will address the above responsibilities to the best of our capabilities.

ANNEX 2 - SAMPLE HARBOUR ENVIRONMENTAL RULES

To be included with berthage agreements and contract documents or posted at the harbour.

1. Independent contractors and self-employed boat workers must first register with the harbour supervisor and explain the nature of their work.
2. Harbour users and contractors must abide by all relevant environmental legislation – **COMPLIANCE IS MANDATORY**. Please consult the Harbour Authority Environmental Management Plan for more information.
3. Harbour users and contractors must follow all Best Management Practices applicable to their work.
4. Harbour users and contractors must comply with all other harbour rules and directives.
5. Sort all garbage and recyclables and place them in the appropriate containers.
6. Transport all hazardous waste by a provincially-certified waste hauler.

ANNEX 3 - COMMON SOURCES OF POLLUTION AND BEST MANAGEMENT PRACTICES

The most common sources of pollution at SCH and the best management practices that address them are described below. These have also been considered in the Monthly Environmental Inspection Checklist (**Annex 5**). A Harbour Authority should contact their local SCH office for information on Best Management Practices customized for their region.

Hull Maintenance:

Antifouling paints contain toxic elements. Painting, scraping, and sanding the hull can release these toxic elements into the environment. Shellfish are particularly vulnerable because paint settles in the sediments where they live and feed. This renders shellfish unfit for consumption.

SAMPLE HULL MAINTENANCE BEST MANAGEMENT PRACTICES

Harbour Authorities should:

Allow only minor hull maintenance in the harbour. Renewal of coatings over more than 25 per cent of the hull surface should be done in drydock, or at the very least subject to Harbour Authority review and approval.

Boat owners should:

- Do shore-based maintenance work only in designated maintenance areas away from the water;
- Use dustless sanders or needle guns that are fitted with vacuum shrouds;
- Use drop cloths to contain paint chips and residues;
- Use only small quantities of solvents and paints to avoid large spills of these materials and make sure containers are tightly sealed when not in use;
- Reuse thinners and solvents by letting particles settle; and,
- Save left-over paint for re-use.

Activities prohibited in the harbour are:

- Hull maintenance on the tidal grid;
- In-water hull cleaning;
- Operations where there is a possibility that scrapings may enter storm sewers or water body;
- Sandblasting; and,
- Spray painting.

Engine Maintenance:

Engine oil can, if released into the environment, degrade water quality and harm the fishing industry by impairing marine life. Most of the larger SCH facilities provide used oil storage tanks as a harbour amenity. Their presence enables harbour users to properly store and dispose of used engine oil. Engine maintenance also requires the occasional replacement and disposal of batteries. Vessel batteries contain acid and heavy metals which, if not handled properly, can pollute the environment.

SAMPLE ENGINE MAINTENANCE BEST MANAGEMENT PRACTICES

General Engine Maintenance:

Boat owners should:

- Place drip trays under machinery when doing maintenance and repairs;
- Inspect fluid lines and hoses for deterioration. Make repairs as appropriate;
- Wash parts over a bucket; do not wash over the water; and,
- Keep the use of engine cleaners to a minimum.

Used Batteries:

Harbour Authorities should:

- Separate batteries from other materials with a physical barrier. Recycle batteries regularly and avoid storing them for long periods of time;
- Store lead-acid batteries upright on a hard, impervious surface that is protected from the weather; and,
- Avoid stacking batteries directly upon each other.

Boat owners should:

- Recycle lead-acid batteries; do not dispose of them with other solid wastes;
- Handle batteries cautiously to avoid broken cases and resultant acid spills; and,
- Place batteries with broken cases in an acid-resistant container like a plastic bucket.

Disposal of Used Engine Oil:

Many harbours have tanks for disposing of used engine oil. The used oil tank is only for the disposal of used oil from vessels, not the general public. These are Best Management Practices for boat owners to transfer their used oil into the harbour's storage tank for used oil.

Boat owners should:

- Not dispose of fuels, antifreeze, paint thinner, bilge water, or any other substance in the used oil tank. Mixing oil with other substances will drastically increase the cost of disposal;
- Wear rubber gloves and use safety goggles when handling used oil;
- Carry used oil to the tank in a container suitable for that purpose. A sturdy plastic bucket with secure lid is acceptable;
- Check used oil tank level. Do not empty your used oil if the tank is already full;
- Notify the Harbour Authority when the used oil tank is 3/4 full so they can call for oil pickup;
- If the used oil tank is full, place lids on all buckets that may have been left around the tank. This will prevent rainwater getting in to the bucket and spilling the oil. Notify Harbour Authority;
- Immediately clean up small spills around the tank that occur during oil transfer. Use absorbent pads, cloths or pillows from the spill kit; and,
- Drain oil filters in the used oil tanks and then dispose of the filters in appropriate containers.

Taking Used Oil Away from the Harbour:

Note that the harbour's used oil tank may only be pumped out by a provincially-approved collector of used oil. It is strictly prohibited for anyone else to siphon oil out of the tank. Harbour users should report all suspicious activity to the Harbour Authority.

Harbour Authorities should:

- Pump tank out only during daylight hours;
- Have a member of the Harbour Authority present to supervise the pumping process;
- Check operator cards to ensure the truck operator has been suitably trained and has all necessary provincial approvals;
- Verify that driver has set truck brakes and chocked the wheels;
- Ensure driver remains with the truck during the entire transfer period; and,
- Keep a record of the volume of oil pumped out of the tank and the date and time.

Vessel Cleaning:

Some vessel cleaning products can be toxic. Biodegradable products can significantly reduce this problem and Harbour Authorities should promote the use of biodegradable and natural cleaners at the harbour (Annex 7) but even biodegradable products can cause harm, and should be used sparingly.

SAMPLE VESSEL CLEANING BEST MANAGEMENT PRACTICES

Boat owners should:

- Use solvents only in designated maintenance areas away from the water; and,
- Do not use products that contain chlorine, phosphates or ammonia.

Bilge Water:

Bilge water usually contains some fuel, oil, and grease in amounts that can exceed federal and/or international regulations. Once contaminated water is pumped out of a bilge, heavier oil components settle to the sea floor, make shellfish unfit for human consumption, and contaminate the sediments. It is difficult and expensive to find suitable disposal sites for contaminated dredge sediments. If a disposal site cannot be found, dredging may not be able to occur.

SAMPLE BILGE WATER BEST MANAGEMENT PRACTICES

Boat owners should:

- Not discharge bilge water that is contaminated with oil, detergents, engine coolant, bilge cleaners or any other harmful substance;
- Not drain oil into bilge;
- Use re-useable adsorbent socks to keep bilge compartment clean. These socks remove oil from the bilge, but not water. When the pad becomes saturated, use gloves and wring it out in the used oil container for recycling. Re-use the pad;
- As an alternative to adsorbent socks, install a bilge oil recovery system (bilge oil water separator). These systems recover the oil and allow for recycling. They can save money because they eliminate the need to buy adsorbent socks; and,
- If a large quantity of oil or fuel has been spilled into the bilge, arrange for the bilge to be pumped out and the contents put into a land based holding tank.

Vessel Fuelling:

Most fuel pumps are able to supply fuel faster than smaller vessels can accept it. Furthermore, fuel tanks are often inadequately vented and “burp” during fuelling. The “burping” effect spills fuel. Although the spill caused by an individual “burp” may be small, it will add up to substantial volume of fuel when one considers all the boats in a harbour over the years. As with bilge water, even small volumes of fuel can contaminate large volumes of water. Leaking or spilled fuel not only harms the marine environment but is also a fire hazard.

SAMPLE VESSEL FUELLING BEST MANAGEMENT PRACTICES

Note: Drums and tanks filled with gasoline vapour are explosive: handle them with extreme care.

Harbour Authorities should:

- Ensure all fuelling operations have written authorization from the Harbour Authority and an operating licence;
- Enforce a “NO WAKE ZONE” in the fuelling area; and,
- Encourage installation of an anti-surge valve in vessels.

Boat owners should:

- For federally regulated fuel storage tanks, become familiar with the tank-specific **Emergency Plan**;
- Enforce a “NO WAKE ZONE” in the fuelling area;
- Have an adsorbent pad or “doughnut” to contain small spills at the fuel nozzle;
- Do not conduct fuelling near fishing gear or any fish products destined for human consumption; and,
- Follow the safety instructions provided by fuel suppliers, as well as the boat’s engine and system user manuals.

It is always preferable that all fuelling in a harbour is undertaken by a trained individual employed by a licensed fuel company. This is not always possible but the following conditions must always apply:

Boat owners should:

- Moor the boat securely to prevent spills;
- Shut off all engines;
- Send guests ashore;
- Put out all open flames;
- Not smoke;
- Turn off electrical switches and power supplies;
- Not use electrical devices, even portable radios can cause sparks;
- Close all windows, portholes, hatches and cabin doors;
- Remove portable tanks from the vessel before refuelling;
- Ground the nozzle against the filler pipe;
- Know how much fuel the tank can hold and do not overfill it—boat owners have a duty to prevent fuel leaks and spills into the boat’s hull and the water;
- Wipe up spills and dispose of the used cloth or towel in an approved container;
- Run the engine compartment blower for at least four minutes immediately before starting the gasoline engine; and,
- Check for vapours from the engine compartment before starting up the engine.

The above list can be found in the Transport Canada Safe Boating Guide 2009 available at: <http://www.tc.gc.ca/eng/marinesafety/tp-tp511-menu-487.htm>

Waste Water:

Black water can be dangerous, even after being treated with chemicals. While generally posing less harm than black water, grey water can on occasion contain some harmful constituents, such as detergent residues and chlorine from bleach. Discharging sewage is prohibited in some Canadian waters. Please consult the *Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals* under the *Canada Shipping Act, 2001* to find out where.

For larger harbours, the Harbour Authority should consider installing a permanent vacuum pump-out system to take black water from vessels into a temporary holding tank ashore. Alternatively, the Harbour Authority can install signs giving the location of the nearest facility with a pump-out. Finally, Harbour Authorities could consider contracting for a mobile sewage pump-out service to visit the harbour at regular intervals.

SAMPLE WASTE WATER BEST MANAGEMENT PRACTICESBoat owners should:

- Not discharge black water or grey water into the harbour;
- Use environmentally safe products; and,
- Upgrade marine sanitation devices, if required.

Storm Water:

Storm water can collect contaminants from the ground and transport them into harbour waters. This is called Non-Point Source (NPS) pollution. Over time, these contaminants will accumulate in the sediments. As with hull cleaning above, this can adversely affect shellfish.

SAMPLE STORM WATER BEST MANAGEMENT PRACTICESHarbour Authorities should:

- Designate an area for maintenance work ashore and in that area cover the storm drains and label them with a “Rainwater Only” caption;
- Request porous pavement for any paving. This allows infiltration of storm water rather than sheet run-off into harbour waters; and,
- Plant vegetated areas along the waters edge. Low-maintenance plants can be used to intercept stormwater before it reaches the harbour waters.

Boat owners should:

- Perform maintenance work in designated maintenance areas away from the water.

Solid Waste (Trash):

Trash can be harmful to the environment and Canadian Regulations prohibit dumping garbage or discharging pollutants in Canadian waters. Some plastics, such as nylon fishing nets, can be ingested or entangle fish and other marine life. Trash in the water is unsightly and detracts from the beauty of a harbour. Occasionally damaged fishing gear is thrown overboard at sea. This fishing gear will continue to catch fish, a phenomenon known as “ghost fishing”. This is illegal and is environmentally detrimental. It is also economically wasteful because the ghost catch is wasted.

Note: Waste Management is usually a municipal responsibility.

Check this link <http://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=EF0FC6A9-1>

SAMPLE SOLID WASTE BEST MANAGEMENT PRACTICES

Harbour Authorities should:

- Prohibit dumping garbage, trash, fish waste, or any other debris into harbour waters; and,
- Provide adequate reception facilities for all solid waste including damaged or derelict fishing gear.

Boat owners should:

- Use garbage cans which should be located throughout the harbour facility for typical domestic wastes;
- Use recycling bins according to the labels on them; and,
- Do not dispose of cigar or cigarette butts in harbour waters.

The Harbour Authority should contact their municipality for assistance on what waste management / recycling options are available in their municipality.

Fish Waste:

Fish waste is unpleasant to look at, smells, and attracts birds. Dumping large quantities of fish wastes in the harbour waters can cause harm to marine life. This is because large quantities of rotting fish parts in water use up oxygen required by marine life.

SAMPLE FISH WASTE BEST MANAGEMENT PRACTICES

Harbour Authorities should:

- Encourage fishermen to clean fish off-shore and discard fish waste at sea;
- Develop a clearly marked fish cleaning area and post rules for disposal of fish waste on the harbour property; and,
- Include harbour specific requirements for cleaning fish in berthage agreements.

The Harbour Authority should contact their municipality to find out what composting services are available in their area.

Hazardous Waste:

Both federal and provincial *Transportation of Dangerous Goods Acts* apply to the transport of hazardous waste.

SAMPLE HAZARDOUS WASTE BEST MANAGEMENT PRACTICES

Harbour Authorities should:

- Send hazardous wastes for disposal using licensed carriers, and file records in the Harbour Authority office;
- Collect and bring hazardous wastes to the local Hazardous Waste Depot;
- Post signs that locate hazardous waste disposal, recycling, and reuse areas. Also post a list of products that must be disposed of as hazardous waste in the province;
- Hazardous materials and waste should be stored in indoor storage areas, in closed containers, and on impervious surfaces as far from the water as possible;
- Keep the total volume of hazardous material and waste stored to a minimum;
- Keep a record of material and waste on-site and dates of storage. Use a “first-in, first-out” system; and,
- Regularly inspect storage areas.

Boat owners should:

- Not mix or place hazardous wastes with non-hazardous wastes;
- Save left-over paint for re-use and allow empty paint cans to dry completely before disposing of them;
- Reuse thinners and solvents by letting particles settle. Let sludge dry and dispose of it as hazardous waste;
- Maintain a binder with all required Material Safety Data Sheets for hazardous materials; and,
- Label all containers to clearly identify their contents and the date generated.

Chemical Storage:

Chemicals used at SCH facilities include anti-freeze, bleach, and acetone. Store chemicals properly to minimize hazards associated with fire, leaks, spills, and accidental mixing of incompatible chemicals.

SAMPLE CHEMICAL STORAGE BEST MANAGEMENT PRACTICES

Harbour Authorities should:

- Not allow storage of flammable products and hazardous wastes on harbour property without written permission from the Harbour Authority, and when the storage method meets recommendations made by local fire department;
- Not store stocks of batteries, fuels or other flammable or hazardous materials on barges or other floating structures;
- Keep all storage areas clean and tidy; keep chemicals on shelves or in fireproof cabinets; and,
- Every six months, clean out storage areas and properly dispose of old and unwanted products.

Boat owners should:

- Store chemicals in a manner approved by the Harbour Authority and that meets all applicable regulations;
- Have accessible Material Safety Data Sheets where required;
- Not store of flammable products and hazardous wastes on harbour property without written permission from the Harbour Authority; and,
- Not store stocks of batteries, fuels and any other flammable or hazardous materials on vessels.

ANNEX 4- ENVIRONMENTAL TARGET TABLE

Example of a completed table

Site Activity or Issue	Environmental Target	Best Management Practices	Estimated Hours of Work	Total Estimated Cost	Person Responsible	Env. Priority Rating (Annex E)	Deadline	Completed?
Litter on Harbour Property	Reduce the total amount of litter	Create and post littering signs	4	\$50	Jamie	3	End of Week	
Oil sheens on water	Reduce occurrence of oil sheens	Provide reusable adsorbent bilge socks to harbour users at cost and encourage users to keep engines maintained to prevent leaks	5	\$0* *To be purchased by users at cost.	Sandy	2	Beginning of next season	
Hull Maintenance	Eliminate paint particles entering the water	Install sign prohibiting hull maintenance on tidal grid	1	\$20	Jamie	1	End of Day	✓
Hull Maintenance	Eliminate paint particles entering the water	Provide drop cloths Purchase dustless sander for rent	10	\$20 for used Drop Cloths \$250* for high-quality dustless sander *to be recouped by rental fees (\$10/day)	Jamie	2	End of Month	

DATE (YYYY-MM-DD) :

ANNEX D- ENVIRONMENTAL TARGET TABLE

Example of a table

Site Activity or Issue	Environmental Target	Best Management Practices	Estimated Hours of Work	Total Estimated Cost	Person Responsible	Env. Priority Rating (Annex X)	Deadline	Completed?

DATE (YYYY-MM-DD) :

ANNEX 5 - SAMPLE CHECKLIST FOR ENVIRONMENTAL INSPECTIONS

AREA TO BE INSPECTED	STATUS	PROBLEM (Y/N)	PRIORITY (1 - 3) (See Environmental Priority Rating)	LOCATION AND COMMENTS If required, describe what actions are being taken to address the problem here.
Walk the shoreline and site.	Environmental Infraction?			
HARBOUR ENVIRONMENTAL RULES				
<ul style="list-style-type: none"> List Harbour Environmental Rules here. 				
BEST MANAGEMENT PRACTICES				
<ul style="list-style-type: none"> List Best Management Practices here. 				
OTHER ITEMS				
<ul style="list-style-type: none"> List other items to be inspected here. 				
<p>If any problems are noted and the correct response is unclear, contact the local SCH Office, another local Harbour Authority, or an environmental consultant for assistance.</p>				

ANNEX 6 - LIST OF IMPORTANT PHONE NUMBERS

Insert local numbers and post this in the Harbour Authority's office.

Fire	
Ambulance	
Police	
Coast Guard	
Harbour Authority	
Local SCH Office	
Environment Canada	
Provincial Authority (see below)	
Used Oil Handling Contractor	
Fuel Supplier	
Plumbing	
Electrical	

ANNEX F - REFERENCE INFORMATION FOR ANNEX 6 (VERIFY BEFORE POSTING)

In the event of an environmental emergency involving the unplanned, uncontrolled or accidental release of hazardous substances, immediately notify the local authorities (police or fire department), and also the authorities shown below:

PROVINCE	AUTHORITY	TELEPHONE NUMBER
Newfoundland and Labrador	Newfoundland and Labrador Regional Office Canadian Coast Guard Fisheries and Oceans Canada	709-772-2083 or 1-800-563-9089
Prince Edward Island	Maritimes Regional Office Canadian Coast Guard Fisheries and Oceans Canada	902-426-6030 or 1-800-565-1633
Nova Scotia	Maritimes Regional Office Canadian Coast Guard Fisheries and Oceans Canada	902-426-6030 or 1-800-565-1633
New Brunswick	Maritimes Regional Office Canadian Coast Guard Fisheries and Oceans Canada	902-426-6030 or 1-800-565-1633
Saskatchewan	Saskatchewan Ministry of Environment	1-800-667-7525
Alberta	Alberta Ministry of Environment	780-422-4505 or 1-800-222-6514
Quebec	Environmental Protection Operations Directorate Quebec Environment Canada	514-283-2333 or 1-866-283-2333
Ontario	Spills Action Centre Ontario Ministry of the Environment	416-325-3000 or 1-800-268-6060
Manitoba	Manitoba Department of Conservation	204-944-4888 (collect calls accepted within the province)
Northwest Territories	Department of Environment and Natural Resources Government of the Northwest Territories	867-920-8130
Nunavut	Department of Environment and Natural Resources Government of the Northwest Territories	867-920-8130
British Columbia	British Columbia Provincial Emergency Program Ministry of Public Safety and Solicitor General	1-800-663-3456
Yukon	Yukon Department of Environment	867-667-7244

ANNEX 7 - ALTERNATIVES TO TOXIC CLEANSERS

Toxic Cleansers	Alternatives
Fiberglass	Baking soda and salt
Aluminum	1 Tbsp of cream of tartar in a half litre of hot water
Brass	Worcestershire sauce, vinegar and salt solution
Chrome	Vinegar and salt solution
Copper	Lemon juice and salt solution
Decks	1 part vinegar to 8 parts water
Hair	Baby shampoo (phosphate-free and Ph balanced)
Hands	Baby oil or margarine
Clear Plastic	1 part vinegar to 2 parts water
Mildew	Vinegar and salt solution
Shower	Wet the area, apply baking soda, and wipe
Toilet	Baking soda
Windows	1 part vinegar to 2 parts water
Wood	Polish with olive oil
Chrome/metal	Polish with baby oil
Bleaching	Hydrogen peroxide
Scouring	Baking soda

Environmental Requirements for Construction and Dredging Projects

GENERAL

SCH undertakes a variety of harbour development and maintenance projects to provide viable, safe, and accessible facilities to harbour users. Many of these projects relate to existing infrastructure. Occasionally certain larger projects need an environmental assessment under the *Canadian Environmental Assessment Act*. Smaller maintenance and repair projects do not typically need an environmental assessment.

THE SCH ENVIRONMENTAL SCREENING GUIDE

SCH must comply with a variety of legislation when undertaking harbour development projects. The *Canadian Environmental Assessment Act* is particularly important. Others include the *Fisheries Act*⁶, the *Navigable Waters Protection Act*, the *Migratory Birds Convention Act, 1994*, the *Canadian Environmental Protection Act*⁷, the *Species at Risk Act* and others. Exactly how these apply to SCH projects and all the various procedures involved in applying them is beyond the scope of this document. The SCH Environmental Screening Guide discusses this in more detail. Harbour Authorities can contact their local SCH office for a copy, if they are interested.

CONSTRUCTION PROJECTS DONE BY HARBOUR AUTHORITIES

The projects that Harbour Authorities undertake may also need environmental assessments under the *Canadian Environmental Assessment Act*, or have other requirements. The Harbour Authority must contact SCH before starting a construction or dredging project at the harbour to determine if an Environmental Assessment is required. The lease also states that Harbour Authorities must contact SCH before making any physical improvements to the harbour. All contracts should state that contractors must abide by all applicable environmental legislation and harbour environmental rules.

⁶ Please note that these requirements are subject to change as of May 2012.

⁷ Please note that these requirements are subject to change as of May 2012.





Contaminated Sites

GENERAL

Contaminated sites are areas of land that contain chemical substances (e.g., heavy metals, petroleum products) that can pose a hazard to the environment or human health or that exceed the levels set out in policies and regulations.

Before the effects of certain activities on the environment were fully understood, some harbours hosted industrial processes that ended up contaminating the site. Many federal harbours have been found to have some level of environmental contamination. Contamination at SCH has stemmed mainly from:

- Fuel storage and handling (hydrocarbons);
- Application and removal of anti-fouling paint (metals);
- Boat grids (metals); and,
- Treated wood structures (metals, hydrocarbons).

FUNDING FROM THE FEDERAL CONTAMINATED SITES ACTION PLAN

In 2004, to provide a coordinated approach for the management of contaminated sites, the Government of Canada introduced the Federal Contaminated Sites Action Plan. This 15 year program provides funding to address the environmental and human health risks posed by federal contaminated sites. See the following link for more information on the program: <http://www.federalcontaminatedsites.gc.ca/>

THE FEDERAL CONTAMINATED SITES INVENTORY

DFO is required to maintain an inventory of its contaminated sites and to provide annual updates to the Federal Contaminated Sites Inventory. This inventory includes information on all known federal contaminated sites. The Inventory has been available to the public since 2002 and is maintained by Treasury Board Secretariat. It is located at the following web site: <http://www.tbs-sct.gc.ca/fcsi-rscf>

CONTAMINATED HARBOUR SITES

Cleaning certain types of contamination can be very costly. In fact, some DFO contaminated sites have required millions of dollars to clean up.

The Federal Contaminated Sites Action Plan has provided funding to enable SCH to assess and manage contamination at many harbours. But Federal Contaminated Sites Action Plan funding will not last forever. Once a contaminated site has been addressed under the Federal Contaminated Sites Action Plan, the site condition is documented and the site is considered closed. Any future contamination of a cleaned site is not generally eligible for Federal Contaminated Sites Action Plan funding. If a cleaned site is re-contaminated, then money which otherwise could have been dedicated to harbour development projects has to be spent addressing the new contamination. For this reason it is critical that Harbour Authorities take every precaution to prevent pollution and avoid contamination of the site.

