

# Green Marine Environmental Program

# 2020



Performance  
Indicators for Ports  
& St. Lawrence  
Seaway  
Corporations

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## 1. AQUATIC INVASIVE SPECIES (Port authorities only)

**OBJECTIVE:** Reduce the risk of introducing and propagating aquatic invasive organisms and pathogens associated with ballast water discharges and biofouling.

**NOTE:** These practices are not part of a performance indicator, and participants are therefore not required to link their performance with any particular level.

### CRITERION 1

1.1. Support scientific research and analysis of selected samplings on port territory.

Note: Although such sampling does not have to be completed in order to fulfill this criterion, the port must have a policy of allowing researchers on its premises for sampling purposes.

### CRITERION 2

1.2. Launch a registry of invasive species found on port territory, to be conducted in collaboration with the government organization carrying out sampling activities.

Note: The Green Marine Secretariat will inform participants of the steps to be taken in this respect once the necessary collaboration agreements have been concluded with the appropriate government authorities.

## 2. GREENHOUSE GASES AND AIR POLLUTANTS

**OBJECTIVE:** Reduce greenhouse gas (GHG) and air pollutant emissions.

LEVEL 1
Monitoring of regulations
LEVEL 2
<p>2.1. Implement policies and communications that discourage idling of vehicles powered by Internal Combustion Engines. Include, at minimum, participant's own road, off-road, and unlicensed vehicles.</p> <p>2.2. Promote sustainable transportation practices by employees.  <u>Examples:</u> Incentives for public transport and carpooling, reorganization of business travel, installation of bicycle racks, etc.</p> <p>2.3. Implement measures to reduce truck congestion and idling.</p> <p><u>Ports only:</u>                  2.4. Implement policies and communications that inform or, when necessary, issue warnings to ships which emit excessive amounts of smoke.</p>
LEVEL 3
<p>3.1. Complete an annual report on GHG emissions.  <u>Note:</u> Include Scope 1 at minimum, and Scope 2 is recommended, as defined by the GHG Reporting Protocol. See Annex 1-A.</p> <p><b>AND fulfill one of the following two criteria:</b></p> <p>3.2. Within the last 5 years, complete a detailed inventory for all Port and terminal operator owned/leased, and operated fleets, such as vehicle, off-road, and locomotives.  <u>Note:</u> Include equipment's model year and engine's model year and/or emissions standard/tier, if available. Other data requirements may include hp and annual hours of operation.</p> <p><b>OR</b></p> <p>3.3. Implement a program to transition to lower emission equipment through cleaner fuels, engine repowers, or equipment replacements. This can be through direct incentives, rebates, or coordination of outside funding sources.</p>
LEVEL 4
<p>4.1. Complete a port-wide inventory of GHGs and air pollutants emitted from all sectors: marine vessels (ocean going and harbor craft), cargo handling equipment, rail, truck, and administrative within the last 5 years. Inventory should include key GHGs: CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O and criteria air pollutants, such as NO<sub>x</sub>, SO<sub>x</sub>, VOC, and PM.  <u>Note:</u> Participants that are in nonattainment areas or that have potential "hotspots" should place a priority on an inventory of their relevant criteria air pollutants. Criteria air pollutants refer to those that are reported in Environment Canada's National Pollutant Release Inventory (NPRI) or U.S. EPA's National Emissions Inventory (NEI).</p> <p>4.2. Adopt a performance plan for air emissions resulting directly from the participant's activities. In the plan, define reduction measures and establish reduction targets.  <u>Note:</u> See Annex 1-B.</p>
LEVEL 5
<p>5.1. Publicly disclose GHG and air pollutants reduction targets and timeframe. Demonstrate continual reduction of the participant's direct GHG emissions (in intensity).  <u>Note:</u> Each participant defines its own baseline year for measuring continual improvement.</p> <p>5.2 New criterion, OPTIONAL for 2020                  Achieve an annual average reduction in GHG intensity of ≥1% based on the inventory (criterion 4.1).</p>

### 3. SPILL PREVENTION

**OBJECTIVE:** Minimize spills and leakages of pollutants into the environment (water, land).

**NOTE:** The term 'location', as referred to for several criteria, may have a different meaning depending on land use and the type of operations taking place (e.g. dock, activity zone, risk area, etc.). Each participant uses the definition that corresponds to its site.

LEVEL 1
Monitoring of regulations
LEVEL 2
<p>Implementation of <b>at least 60%</b> of the applicable criteria</p> <p>2.1. Perform vehicle and machinery fueling, lubrication and maintenance at a minimum distance of 30 m (100 ft) from the water and at a minimum distance of 15 m (50 ft) from a tributary (catch basin, ditch, etc.).  <u>Note:</u> If these requirements cannot be met, alternative pollution prevention measures must be taken (watertight lids, rubber rugs, retention pans, etc.).</p> <p>2.2. Use retention pans under stationary devices and equipment that can potentially leak or which needs to be resupplied periodically (generating sets, compressors, etc.).</p> <p>2.3. Implement inspection and maintenance procedures for all devices and equipment that could potentially leak (tanks, generating sets, compressors, etc.).</p> <p>2.4. Regularly inspect near shore water and property to identify and immediately stop leaks from any source.</p> <p>2.5. Should there be any doubt about the environmental quality of runoff water collected in an observation shaft or excavation pit (colour, odour); such water is to be intercepted for sampling purposes or proper treatment.</p> <p>2.6. Have available at least one emergency spill kit on site for dealing with minor spills.  <u>Note:</u> A minor spill is a spill that poses no or little threat to people and/or the environment and that can be cleaned up by using an emergency response kit.</p> <p>2.7. Train employees to respond to minor spills.</p> <p>2.8. As needed, clean ground surfaces to collect contaminants before they are washed away by storm water.</p> <p>2.9. Minimize discharge of wash water into the environment when washing vehicles and equipment.</p>
LEVEL 3
<p>3.1. Implement all applicable best practices of level 2.</p> <p>3.2. Adopt a Water and Land Pollution Prevention plan that covers all sites that the port maintains control over.  <u>Note:</u> A model is provided in Annex 2-A.</p> <p>3.3. Keep a record of all spills and accidental discharges of pollutants into the environment that occur on port property, and have a reporting procedure communicated to tenants and users.</p>

#### LEVEL 4

4.1. Implement a documented Preventive Inspection and Maintenance program for vehicles and equipment, pipes, containers and tanks which might release discharges into the environment (fuel, lubricants, etc.).

Note: This program only applies to vehicles and equipment that are used exclusively for the participant's direct activities.

Note: See Annex 2-B.

Participants must also fulfill either criterion 4.2 or all the following 4.3 to 4.6 criteria

4.2. Develop and adopt a Storm Water Management plan.

Note: See Annex 2-C.

**OR**

In one or more of the participant's locations:

4.3. Collect and treat storm water via an appropriate storm water treatment device, process or procedure.

4.4. Inspect and maintain installed or used devices, process or procedures on a regular basis.

4.5. Sample and analyze treated storm water routinely to ensure proper functioning of treatment equipment and infrastructure.

4.6. Use low toxicity/biodegradable lubricants for fixed hydraulic equipment located near the shore.

Note: Refer to the U.S. Environmental Protection Agency (EPA)'s definition of Environmentally Acceptable Lubricants: biodegradable, minimally toxic and not bio-accumulative (p. 143 of Appendix A of the Vessel General Permit (VGP) for discharges incidental to the normal operation of vessels).

#### LEVEL 5

In all of the participant's participating terminals or locations:

5.1. Implement a documented Preventive Inspection and Maintenance program for vehicles and equipment, pipes, containers and tanks which might produce spills or discharges into the environment (fuel, lubricants, etc.).

Note: This program only applies to vehicles and equipment that are used exclusively for the participant's direct activities.

Note: See Annex 2-B.

In the majority of the participant's participating terminals or locations:

5.2. Collect and treat storm water via an appropriate storm water treatment device, process or procedure.

5.3. Inspect and maintain installed or used devices, process or procedures on a regular basis.

5.4. Sample and analyze treated storm water routinely to ensure proper functioning of treatment equipment and infrastructure.

5.5. Use low toxicity/biodegradable lubricants for fixed hydraulic equipment located near the shore.

Note: Refer to the U.S. Environmental Protection Agency (EPA)'s definition of Environmentally Acceptable Lubricants: biodegradable, minimally toxic and not bio-accumulative (p. 143 of Appendix A of the Vessel General Permit (VGP) for discharges incidental to the normal operation of vessels).

5.6. Have secondary containment in place for all fixed and portable outdoor above ground storage tanks and containers (permanent and in transit) that are located within a distance of 30 m (100 ft) from the water and 15 m (50 ft) from any ditch, sewer system, underground stream, etc. This requirement applies to all hazardous products.

Note: Secondary containment includes any measure preventing a spill or a discharge from a primary storage tank or container from entering the environment. The chosen measure(s) and its/their capacity for secondary containment must be able to address a discharge resulting from the most typical failure mode. Acceptable measures include:

- Impervious dikes, berms or retaining walls;
- Curbing;
- Drainage system;
- Weirs, booms, floating barriers;
- Spill diversion or retention ponds;
- Drip pans or retention pans;
- Sumps or collection systems;
- Double-walled tanks;
- Sorbent material in sufficient quantity;
- Any other equipment, material and/or resources allowing to contain the spill or discharge.

5.7. Perform a spill response exercise on a regular basis (at least annually in case of a tabletop exercise, at least every two years for a simulated site specific drill, including the post-mortem of a spill incident).

## 4. DRY BULK HANDLING AND STORAGE

**OBJECTIVE:** Reduce cargo losses and dust generated during handling, transportation and storage of dry bulk.

**NOTE:** Only applicable to port authorities that operate a dry bulk terminal.

LEVEL 1
Monitoring of regulations
LEVEL 2
<p>2.1. Collect cargo residues on the ground as soon as possible using methods that minimize dust generation (e.g. water spraying, vacuum sweeping, etc.).</p> <p>2.2. Ensure that collected cargo residues are properly stored, recovered and/or disposed of.</p> <p>2.3. Take measures to prevent water contamination during loading and unloading operations (e.g. use canvas between ships and docks when unloading).</p> <p>2.4. For outdoor operations, reduce dust dispersion by using one or more of the following methods, but not limited to: spraying a light mist; using screens, air or water curtains and/or drapes; reducing conveyor belt height and speed; keeping outdoor dry bulk piles covered or protected by wind shields as much as possible when they are likely to blow away by the wind or to leach out on to the ground.</p> <p>2.5. Fit storm drains with screens, baskets, geo-textiles or other devices in order to filter suspended solids found in storm water runoff, and ensure that such devices are cleaned on a regular basis.</p> <p>2.6. Recover cargo losses under the conveyors.</p> <p>2.7. Regularly wash vehicles in dedicated areas to avoid dust dispersal on and off site.</p>
LEVEL 3
<p>3.1. Adopt a Water and Land Pollution Prevention plan.  <u>Note:</u> A model is provided in Annex 2-A.</p> <p>3.2. Produce an incident report and maintain records for each incident of abnormal dust or discharge accompanied by a detailed analysis of the causes and corrective measures implemented.</p>
LEVEL 4
<p><u>In the majority of the terminals operated by the port:</u></p> <p>4.1. Implement a documented Inspection and Preventive Maintenance program targeting dry cargo handling equipment and dust suppression technologies.  <u>Note:</u> See Annex 2-B.</p> <p>4.2. Adopt a procedure framing the management of loading and unloading operations in cases of abnormal dust emissions due to wind.  <u>Note:</u> The participant must have in place a procedure or a policy that defines, for each type of cargo, the adverse weather conditions that affect loading and unloading operations, and preventive measures to be taken. Procedures must also include a record of incidents and must be communicated to and systematically applied by concerned staff.</p> <p>4.3. Conduct a detailed analysis of the loading, unloading and handling process to identify critical stages, situations or areas causing dust dispersal and establish a protocol for preventative measures.</p>

**LEVEL 5**

In all of the terminals operated by the port:

5.1. Implement a documented Preventive Maintenance program targeting dry cargo handling equipment and dust suppression technologies.

Note: See Annex 2-B.

5.2. Adopt a procedure framing the management of loading and unloading operations in cases of abnormal dust emissions due to wind.

Note: The participant must have in place a procedure or a policy that defines, for each type of cargo, the adverse weather conditions that affect loading and unloading operations, and preventive measures to be taken. This procedure must also include a record of incidents and must be communicated to, and systematically applied by, concerned staff.

5.3. Conduct a detailed analysis of the loading, unloading and handling process to identify critical stages, situations or areas causing dust dispersal and establish a protocol for preventative measure.

5.4. Use enclosed conveyors or chutes and telescoping arm loaders, operate in a closed circuit, or use other similar equipment to limit dust generation and releases into the environment.

5.5. Use dust suppression, baghouse, screw conveyors, vacuum collecting equipment or other similar equipment in the handling of fine, granular or powdery material.



## 5. COMMUNITY IMPACTS

**OBJECTIVE:** Reduce the amount of noise, dust, odour and light to which people residing close to port facilities are exposed.

**NOTE:**

- This indicator applies to all participants unless they provide reasonable arguments to be exempt (e.g. location in a very isolated place, no nearby community). However, the absence of complaints alone does not constitute a sufficient motive to be exempt of the application of the indicator.
- A criterion applies only if the participant’s operations cause the nuisance to which the criterion is related. A nuisance is any factor that has a negative impact on the health or well-being of the people residing close to port facilities.
- The activities covered by the community impacts indicator are limited to those related to commercial shipping and cruise only.

LEVEL 1
Monitoring of regulations
LEVEL 2
<p>Implementation of the <b>majority</b> of applicable criteria:</p> <p><u>External communications:</u></p> <p>2.1. Make available/post a telephone number of, or redirect calls to, the authority in charge of receiving complaints related to port activities.</p> <p>2.2. Once a complaint has been made to the participant, move swiftly in dispatching a responsible individual to the site and, to the extent possible, ensuring that corrective measures are taken.</p> <p><u>Noise:</u></p> <p>2.3. Issue a warning that ships' sirens are to be used only to ensure safe movement.</p> <p>2.4. Adopt operational procedures or take measures limiting the use, or reducing the impact of warning signals, without compromising safety (e.g. use strobe light during nighttime operations, use lynx alarm, adapt the height or direction of the device, adjust the frequency of the signal, etc.).</p> <p>2.5. Take measures to reduce the noise emanating from rail operations at the port (such as rail lubrication, etc.).</p> <p>2.6. If technically possible, limit idling of vehicle, equipment and locomotives.</p> <p>2.7. Have a documented process (e.g. purchase policy) for selecting less noisy equipment when buying new equipment.</p> <p><u>Dust:</u></p> <p>2.8. Adopt measures to hold back dust on roads (e.g. watering of roads, wet brushing, paving, maintenance of pavement, etc.).</p> <p>2.9. Apply measures to improve the management of bulk cargo storage (e.g. covering cargo that is stored in piles, reducing the height of such piles, moving piles to areas that are less exposed to wind, containment walls, etc.).</p> <p><u>Housekeeping:</u></p> <p>2.10. Implement cleaning procedures for wharfs, driveways and loading and unloading areas.</p> <p>2.11. Place marked trash and recycling containers at locations convenient to employees, visitors and truck operators.</p> <p>2.12. Cover trash collection areas and containers to avoid dispersion by wind and storm water.</p> <p><u>Traffic/congestion:</u></p> <p>2.13. Have a procedure on bus, truck or railway traffic management to avoid local congestion (e.g. signboard, traffic coordinator or checker).</p> <p><u>Light:</u></p> <p>2.14. Direct lights so they only illuminate the necessary zone.</p> <p>2.15. Switch off bothersome lighting at a specific time if there are no operations underway.</p>

**LEVEL 3**

3.1. Adopt a plan for managing community issues, which formally incorporates all applicable best practices, set out in level 2. Such a plan is to include a procedure for handling complaints.

Note: See Annex 3-A.

3.2. Have a documented procedure for handling complaints.

3.3. Have in place a procedure to verify sound levels of operations on a regular basis (at least annually).

3.4. Have a procedure for evaluating environmental and social aspects of new projects, activities or types of operations including handling of new products, if there is uncertainty around the potential for environmental and social effects and where mitigation measures are not known to be effective and established.

Note: Not applicable to projects that are subject to an environmental assessment under existing regulation.

Note: See Annex 3-B.

3.5. Establish and implement a nuisance mitigation plan during works and/or operations.

Note: For ports, mitigation measures must be systematically part of all service contracts and communicated to tenants.

3.6. Adopt and communicate a policy that deals with noise from vessels at anchor, and/or collaborate with the competent authorities to establish and communicate procedures for dealing with noise from vessels at anchor (e.g. operation of auxiliary or back-up engines, maintenance work, etc.).

**LEVEL 4**

Implementation of the **majority** of applicable criteria:

Noise:

4.1. Continuously sample noise and/or air emissions (dust and/or odours) in the problem areas (e.g. areas located close to residences, subject to frequent complaints or particularly exposed to wind, etc.) and have a data monitoring process in place.

4.2. Create screens against sound with the help of sound-reducing trees or walls if appropriate.

4.3. Install silencer (muffler), catalyts, timer or other device to reduce noise from noisy equipment or cover with sound insulating material.

Dust:

4.4. Implement mitigation measures (e.g. canvas, tarpaulins, curtains or other equivalent control barriers) during spray painting and blasting operations to prevent dispersal of dust and aerosol particles by the wind.

4.5. Collect and confine spent abrasives and debris (after blasting to dock-bottom/yard grounds) to avoid dispersion by wind and storm water (e.g. cover piles or use covered containers).

Light:

4.6. Install fixtures that optimize lighting and reduce light pollution when replacing fixtures or during new projects.

4.7. Evaluate existing lighting plans and take effective measures to optimize lighting and reduce impacts.

Nuisance mitigation:

4.8. Install green corridors (e.g. dune system), vegetated or recreational areas (e.g. tree alley, parks) between operating site and residential area if appropriate.

4.9. Have a procedure or system in place that optimizes truck movements to manage congestion and mitigate other associated issues.

Community relations:

4.10. Be actively involved in local community organizations (e.g. watershed committee, local NGOs, etc.).

Note: Payment of a membership to a local organization is not sufficient to fulfill this requirement. The participant must prove that it is actively involved (e.g. be a Board member, participate in committees on a regular basis, etc.).

4.11. Implement permanent communication channels (e.g. website, distribution of pamphlets, etc.) to inform the community, on a regular basis, on major projects and construction work, their impacts and mitigation measures taken.

4.12. Have a documented and communicated procedure to consult the community (e.g. public information session) before implementing new projects that can have an impact on the environment and/or the community.

Note: If new projects have been implemented, the participant must prove that the procedure has been followed.

**LEVEL 5**

5.1. Implement all applicable criteria listed in Level 4.

5.2. Lead a permanent consultative committee which is open to citizens.

## 6. ENVIRONMENTAL LEADERSHIP

**OBJECTIVE:** Recognize the significant influence of port authorities and Seaway corporations as land owners and/or managers over the environmental practices of their tenants and/or users.

LEVEL 1
1.1. Reach level 2 for at least one other performance indicator in the program.
LEVEL 2
2.1. Reach level 2 for at least <b>2</b> other performance indicators of the program.  <b>AND fulfill one of the following 3 criteria:</b>  2.2. At least one of the participant's eligible tenants is a Green Marine participant. <u>Note:</u> An "eligible tenant" is a tenant located within the participant's boundaries that could potentially become a participant of the Green Marine Environmental Program. <b>OR</b> 2.3. Write and publicly communicate an environmental policy. <b>OR</b> 2.4. Develop and update annually a section on the company's public website presenting an overview of the Green Marine program and the company's latest performance results. <u>Note:</u> Green Marine offers assistance to participants in developing the content.
LEVEL 3
3.1. Include environmental clauses in all new leases and contracts. <b>Fulfill one of the following 4 criteria:</b> 3.2. At least 25% of the participant's eligible tenants are Green Marine participants. <u>Note:</u> The participant may also use, for reference, the tonnage handled by tenants that are participants to the Green Marine environmental program. <b>OR</b> 3.3. Implement a voluntary system that encourages tenants to establish environmental objectives. <b>OR</b> 3.4. Undergo an internal or external audit at least every 5 years to verify the environmental compliance of all operations. <u>Note:</u> Any non-compliances found should be rectified, when possible, within the following year. Otherwise, an action plan with a timeline should be developed. <b>OR</b> 3.5. Actively participate in social and/or environmental community activities every year (e.g. shoreline clean-up operations, tree-planting campaigns, scholarships, educational activities, open houses, port days, etc.). <u>Note:</u> Active participation is defined as the provision of support by the participant, whether through financial means, human resources and/or material/equipment.

**LEVEL 4**

**Fulfill at least 4 of the following criteria:**

4.1. More than 50% of the participant's eligible tenants are Green Marine participants.

Note: The participant may also use, for reference, the tonnage handled by tenants that are participants to the Green Marine environmental program.

4.2. Use 1% or more of annual operating revenues to finance environmental or social projects linked to the participant's environmental footprint.

4.3. Finance or make donations of at least 1 % of annual operating revenues to environmental projects.

4.4. Use a variable fee schedule based on the environmental participation of users (e.g. a variable fee schedule based on the environmental certification obtained by ships or on the type of fuel used by ships).

4.5. Implement an environmental management system. E.g. ISO 14000.

Note: At level 4, certification is not mandatory if the participant can demonstrate that all the elements of an environmental management system are in place. At level 5, certification is mandatory.

4.6. Publish an annual report providing details of the participant's environmental performance.

Note: The report must follow a recognized standard, such as the Global Reporting Initiative's Reporting Guidelines.

4.7. Complete a project within the last five (5) years that provides public access to shorelines.

4.8. Complete a project within the last five (5) years that restores natural habitats (must not be linked to a mandatory compensation measure).

4.9. Convert at least 50% of the participant's fleet of road vehicles to more environmentally friendly technologies (high-renewable-content fuels, hybrids, etc.).

Note: High-renewable-content fuels must contain more than 5% renewable content.

4.10. Introduce innovative or exemplary technologies or projects, within the last five (5) years, aimed at reducing significantly the environmental footprint of the port or seaway's activities (shore power programs, development of renewable energy, etc.).

4.11. Any other comparable measure accepted by the Green Marine Secretariat.

Note: See Annex 4-A.

4.12. Implement a sustainable infrastructure management framework, such as Envision, in the development process of infrastructure projects.

**LEVEL 5**

5.1. The participant fulfills **at least two additional criteria** listed in level 4.

5.2. Attain an **average that is equivalent to level 4** with respect to the program's **other** performance indicators.

## 7. WASTE MANAGEMENT

**OBJECTIVE:** Increase waste diversion and reduce at source the waste arising from administrative activities and site operations.

LEVEL 1
Monitoring of regulations
LEVEL 2
<p>Implementation of the <b>majority</b> of applicable criteria:</p> <p>2.1. Equip offices, workspaces and facilities with recycling bins, including for used batteries, cartridges and fluorescent light bulbs and make sure they are strategically located and appropriately labeled.</p> <p>2.2. Install clear signage for waste disposal on port or terminal property.</p> <p>2.3. Provide training and/or educate staff on established garbage management procedures and hierarchy (Reduce, Reuse, Recycle, Valorize – as in to add value – and Eliminate), including on procedures for handling and disposing of hazardous waste.</p> <p>2.4. Encourage the use of 1) reusable, 2) recyclable and 3) compostable supplies (e.g. reusable dishes, etc.).</p> <p>2.5. Encourage staff to adopt sustainable paper use practices (e.g. reduce overall printing and copy paper consumption, double-sided printing, use post-consumer recycled paper, reuse and recycle paper, etc.).</p> <p>2.6. Promote and encourage tenants, users, contractors, and/or clients to minimize waste and to recycle.</p> <p>2.7. Gather information from the local service provider/waste hauler in order to have a better understanding of the relative costs and the environmental benefits related to the disposal of waste, recycling, and organics.</p> <p>2.8. Eliminate or limit the use of plastic straws, plastic bottles, single-use coffee cups, and any other similar items in administrative office.</p> <p><u>Operating ports only:</u></p> <p>2.9. Reuse and/or recycle as much as possible dunnage, lining and packaging material, where compliant with federal and/or state wood packaging import regulations.</p> <p><u>Ports operating dry bulk terminals (2.10, 2.11, 2.12):</u></p> <p>2.10. Adopt procedures to minimize the amount of cargo residues left on board the ships.</p> <p>2.11. Facilitate the discharge of solid bulk cargo residues ashore, including hold sweepings.</p> <p>2.12. Recover as much as possible off specification products (i.e. products captured in storm water sumps and effluent treatment works) or reintroduce them into the handling process.</p> <p><u>Note:</u> Not applicable to terminals that handle multiple dry bulk products because of cross contamination risks.</p>
LEVEL 3
<p>3.1. Implement all applicable best practices listed at level 2.</p> <p><b>Fulfill one of the following 2 criteria:</b></p> <p>3.2. Produce an annual inventory of all waste being generated during the participant's direct activities (administrative and/or site operations).</p> <p><b>OR</b></p> <p>3.3. Conduct a waste audit every five (5) years to identify the types and amount of waste being generated during the participant's direct activities (administrative and/or site operations).</p> <p><u>Note:</u> The inventory or audit does not include waste generated from demolition or construction projects.</p> <p><u>Note:</u> See Annex 5-A.</p>

**LEVEL 4**

4.1. Adopt an environmentally preferable purchasing policy that encourages sustainable purchasing practices (e.g. products that produce less waste (less packaging, reusable/ recyclable/compostable products, products with postconsumer recycled content, etc.).

4.2. Conduct a waste audit every five (5) years to identify the types and amount of waste being generated during the participant's direct activities (administrative and/or site operations).

Note: The waste audit does not include waste generated from demolition or construction projects.

Note: See Annex 5-A.

4.3. Based on the results from the waste audit, adopt and implement a Waste Management and Reduction plan that describes the participant's waste management practices and procedures, including all applicable best practices of levels 2 and 3. The plan must also define measurable waste reduction, recycling, and/or diversion rates and identify practices and strategies to achieve these rates.

Note: Each participant defines its own "normalizer" to take into account fluctuations in port activities (e.g. per capita, per ton, per vessel, etc.).

Note: See Annex 5-B.

4.4. Adopt and implement formal procedures for reducing, reusing, recycling, and valorizing and/or properly disposing waste generated during construction, excavation and demolition work (e.g. cement, concrete, bricks, gypsum, wool, asphalt, wood, steel, and other metals, etc.). These procedures must be included in all construction, demolition, and excavation projects.

**LEVEL 5**

5.1. Demonstrate continual achievement in waste diversion and reduction at source in line with the objectives established in the Waste Management and Reduction plan.

## 8. UNDERWATER NOISE

### OBJECTIVE

Manage underwater noise sources during ongoing activities, development/construction, and/or port maintenance activities to reduce impacts to marine mammals.

### NOTES:

- Green Marine recognizes that underwater noise may potentially impact a broader range of acoustic species than just marine mammals. While the initial objective of this indicator covers marine mammals, future development may expand the scope.
- Applicable only for ports located on salt water.

LEVEL 1
Monitoring of regulations
LEVEL 2
<p><b>Fulfill 3 of the 4 following criteria:</b></p> <p>2.1. Promote and raise awareness of tenants and ship operators calling at the port about the issue of underwater noise by distributing pertinent information on the effects of underwater noise on marine mammal and sensitive areas.</p> <p>2.2. Promote the provision of marine mammal sightings data from a stewardship program with a publicly available database (in Canadian and US waters) through a logbook program or a recognized application (like Whale Alert and Whale Report) to port users, pilots' associations, and ship operators calling at the port.</p> <p>2.3. Summarize current knowledge to understand target species, to identify sensitive habitats, and to understand the port activities' zone of impact. For example, this may inform vessel traffic management (potentially including vessel routing and/or speed).</p> <p>2.4. Require the services of a trained and experienced marine mammal observer (MMO) during port-related in-water construction or during on-land construction work (below high water) that is known to increase significantly the underwater noise soundscape.  <u>Note:</u> This criterion is only applicable for ports or port tenants having ongoing construction work. The decision of requiring services of MMO should be based on seasonality, presence of endangered species, and sensitive areas.</p>
LEVEL 3
<p>3.1. Implement all applicable criteria listed at Level 2.</p> <p>3.2. Develop and adopt an Underwater Noise Mitigation and Management plan (UNMMP), which incorporates a range of noise reduction/mitigation options and best practices/operating procedures for both acute and chronic noise generating activities including construction and shipping.  <u>Note:</u> See Annex 6-A</p> <p><b>AND fulfill one of the following 2 criteria:</b></p> <p>3.3. As part of the UNMMP, establish an ambient underwater noise monitoring program, analyze and archive the data to understand local ambient underwater noise conditions.  <u>Note:</u> The program, that is developed in collaboration with a bioacoustician or a specialized firm, would specify the objectives, method, location, and frequencies for monitoring. If the port is planning construction or operational changes, additional noise measurements (using the same protocols) should be done to measure trends in ambient noise.</p> <p><b>OR</b></p> <p>3.4. Offer a recognition program to ship owners for vessel noise reductions.  <u>Note:</u> For example, ship owners could be recognized for hull and propeller maintenance.</p>

**LEVEL 4**

4.1. Implement all applicable criteria listed at Level 3.

4.2. Develop and incorporate targets for underwater noise reduction into the UNMMP in port waters and to the extent possible. These targets should be developed with the help of information obtained from the noise monitoring program.

Note: This strategy would include a methodology to measure progress achieved in order to reduce underwater noise generated by the port and set realistic targets for noise reduction.

**AND fulfill one of the following 3 criteria:**

4.3. Develop an incentive program for ship owners who implement vessel noise mitigation measures.

Note: For example, this program could offer a discount / berthing fee reduction to vessels that have a notation for underwater radiated noise from a recognized classification society.

**OR**

4.4. Establish an in-situ acoustic monitoring system to collect relative source level of individual ships. This data should be shared with ship owners.

Note: A specific protocol will have to be developed in order to collect valuable data. This criterion is linked with criterion #4.2 from the underwater noise indicator for ship owners.

**OR**

4.5. Support/collaborate on scientific research that includes the measurement of underwater radiated noise.

Note: Projects done within the past 5 years can be considered to fulfill this criterion.

**LEVEL 5**

5.1. Implement 4 of the 5 applicable criteria listed at Level 4.

5.2. Meet reduction targets on underwater noise.

5.3. Demonstrate continual improvement in implementing the Underwater Noise Mitigation and Management plan to utilize noise reduction solutions and technologies that reduce underwater noise.