



GREEN MARINE / ALLIANCE VERTE

# **PARTNERING FOR A SUSTAINABLE FUTURE**

REPORT ON THE PROGRESS  
MADE BY PARTICIPANTS OF THE  
GREEN MARINE ENVIRONMENTAL PROGRAM  
2008-2009





MAY 2009

## A MESSAGE FROM GREEN MARINE'S CO-CHAIRS

As the co-chairs of Green Marine, it is with great pleasure that we present this overview of Green Marine's first year of operations, as well as the first global results of the companies that are participants of the *Environmental Program of the St. Lawrence and Great Lakes Maritime Industry*.

Since its launch in October 2007, Green Marine has worked very hard to attain the many objectives that it established during its first year of existence. Today, we are pleased to report that Green Marine has met the challenges that it set for itself.

In just over a year's time, we have succeeded in mobilizing more than fifty percent of the St. Lawrence / Great Lakes maritime industry. At last count, Green Marine's membership numbered 45 participants, 21 partners and 24 supporters. In February 2008, we held the first Green Tech conference on environmental technologies for marine transportation, which proved to be a resounding success. We also distributed copies of the Environmental Program and the accompanying self-evaluation guide to shipowners, ports and terminals, and provided participants with assistance in completing their first self-evaluations (which had to be returned to the Green Marine Coordinator by April 1, 2009).

During the second edition of the Green Tech conference, we presented the first cohort of the Environmental Program's participants with their official certifications, and shared the first global results of their environmental performance with the public. A commitment to transparency has been a hallmark of the Green Marine initiative since its earliest days, and we intend to maintain this commitment by publicly sharing our results and processes on an ongoing basis. Towards that end, the information presented in this report includes the global averages that participants have attained for each of the issues targeted by the Environmental Program.

This first evaluation process clearly shows that the St. Lawrence – Great Lakes maritime industry goes beyond regulatory compliance when it comes to environmental matters and is ready to pursue objectives that are even more demanding than the stringent regulations that already govern the sector. The results generated from these evaluations will serve as an excellent starting point for measuring Green Marine's success over the coming years, by quantifying the industry's environmental performance with respect to the priority issues it faces.

The environment has been at the heart of the marine industry's preoccupations for a number of years. Although it is now a well-known fact that marine is the most environmentally friendly of all the transportation modes, we cannot afford to simply rest on our laurels in this respect. If we are to remain a leader on environmental matters, particularly in the current economic context, we must intensify our efforts to remain competitive and to continue forging this path towards the sustainable development of the marine industry.

We encourage you to read this Progress Report in its entirety. Among the information that you will find within its pages is a presentation of Green Marine and its Environmental Program, a summary of Green Marine's past and future actions, and a list of Green Marine participants, partners and supporters.

Before concluding, we take this opportunity to remind you of the importance of the Green Marine initiative. Much more than a statement of principles, Green Marine represents a significant and ambitious step forward for our industry – a step characterized by a voluntary commitment to strengthening our environmental performance by moving beyond regulatory compliance and embracing excellence and leadership.

We trust that you will find this report interesting and invite you to follow Green Marine's evolution via its website at [www.Green-Marine.org](http://www.Green-Marine.org).

Green Marine's Co-Chairs

***Gerry Carter***

*Canada Steamship Lines*

***Terry Johnson***

*Saint Lawrence Seaway  
Development Corporation*

***Laurence Pathy***

*Fednav Limited*

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# WHAT IS GREEN MARINE?

**For the first time in North America, the different players who make up the St. Lawrence – Great Lakes maritime industry have voluntarily come together under the aegis of Green Marine, with a view to strengthening their environmental performance through a major maritime corridor in both Canada and the U.S.**

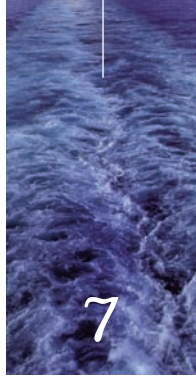
Green Marine is the St. Lawrence-Great Lakes maritime industry's partner for a sustainable future in both Canada and the U.S. Its primary objective is to strengthen the industry's environmental performance through a process of continuous improvement.

The cornerstone of the Green Marine initiative is the *Environmental Program of the St. Lawrence and Great Lakes Maritime Industry*. Companies participating in this program evaluate their performance with respect to the six priority environmental issues listed below, on a scale that ranges from regulatory compliance to excellence in their practices.

## **PRIORITY ENVIRONMENTAL ISSUES**

- 1. AQUATIC INVASIVE SPECIES**  
Reduce the risk of introducing and propagating aquatic organisms and dangerous pathogens via ships' ballast water
- 2. AIR EMISSIONS**  
Reduce emissions of sulphur oxide (SO<sub>x</sub>) and of nitrogen oxide (NO<sub>x</sub>)
- 3. GREENHOUSE GASES**  
Reduce emissions of greenhouse gases (GHGs)
- 4. CARGO RESIDUES**  
Reduce discharges of cargo residues
- 5. OILY WATERS**  
Reduce the risk of discharging oily waters
- 6. CONFLICTS OF USE FOR PORTS AND TERMINALS**  
Reduce the levels of noise, dust, odours and light to which individuals residing close to port installations are exposed

Other issues will be added to the program in the coming years, with a view to reducing the industry's environmental footprint even further.



## EVALUATION AND CERTIFICATION PROCESS

Every year, participants use a self-evaluation guide to assess their environmental performance with respect to these issues, and provide a summary of their results to the Green Marine Coordinator. As of their second year in the program, participants must have their evaluations audited by a third party, with the global results published in Green Marine’s Annual Progress Report. As part of its commitment to transparency, Green Marine’s objective over the coming years is to publish the global results of the environmental performance of each of its members.

During the first year, participants of the Environmental Program receive a logo indicating that their certification is “in progress.” This will be replaced with a “certified” logo during the second year. These logos are important tools for enabling participants to publicize their involvement in the Green Marine initiative.

In addition, all Green Marine participants receive an annual certificate attesting to their participation in the Environmental Program. The certificates are presented during the annual Green Tech conference on green technologies for the maritime industry.



**ACTION PLANS** Each of the priority environmental issues covered by the Environmental Program is subject to an action plan that comprises both collective and corporate actions.

**COLLECTIVE ACTIONS** These are orientations and positions that impact the industry as a whole and generally require government participation. Such actions are carried out by the Green Marine Mangement Corporation.

**CORPORATE ACTIONS** Green Marine requires participants to adopt practices and technologies with a direct and concrete impact. Participants’ progress is evaluated with the help of performance indicators, each of which is defined on a scale ranging from one to five, as per the criteria below:

## PERFORMANCE INDICATOR

LEVELS	PRIORITY ENVIRONMENTAL CRITERIAS
1	Compliance with applicable regulations and adherence to Green Marine’s guiding principles
2	Systematic use of a specific number of best practices
3	Integration of best practices into an adopted management plan and specific understanding of the issue’s impact
4	Introduction of new technologies
5	Excellence and leadership

Only one level can be chosen for each indicator. In addition, a given level cannot be attained unless all of the criteria associated with the preceding level have been attained. Although Green Marine recognizes the potential for a certain amount of subjectivity in how participants evaluate their environmental performance during the first year (given that they are not yet subject to an external audit process), this will cease to be an issue as of the second year when participants' self-evaluations will have to undergo external verification.

The Environmental Program is designed to encourage participants to go further than regulatory compliance (which is level 1 of the performance indicators) and to strive for level 5, which represents excellence and leadership. Indeed, the program is designed to instill a process of continuous improvement, with the majority of participants attaining level 3 (integration of best practices into an adopted management plan and quantifiable understanding of the environmental impact) a couple of years after joining the program.

### **TRAINING, R&D, AND ENVIRONMENTAL MANAGEMENT SYSTEMS**

As part of the Environmental Program's philosophy of continuous improvement, participants commit to implementing an internal training process and to actively supporting research and technological innovation with respect to environmental matters. Green Marine also encourages and supports the adoption of environmental management systems by participants.

Each year, Green Marine organizes an environmental conference on green technologies for marine transportation (Green Tech for Shipping), which focuses in particular on environmental management, training, and R&D. Given that these subjects are key elements of the Environmental Program, Green Marine encourages its members to actively participate in the conference and offers them a preferential registration fee towards that end.

# ACTIVE AND COMMITTED MEMBERS

Implementation of the Green Marine Environmental Program involves shipowners, ports, terminals, stevedoring companies, marine agents, shippers, suppliers, governments, cities and environmental groups, all with a common goal of ensuring the sustainable development of marine transportation.

## PARTICIPANTS

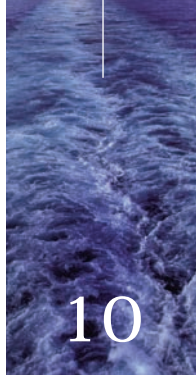
Participants of the Environmental Program are companies working within the St. Lawrence and Great Lakes maritime industry in both Canada and the U.S. They include:

- Domestic and international shipowners
- Ports and terminals
- Stevedoring companies
- The St. Lawrence Seaway



## THE CURRENT LIST OF PARTICIPANTS IS AS FOLLOWS:

1. Algoma Central Corporation	24. Porlier Express
2. Bunge of Canada	25. Port of Milwaukee
3. Canfornav	26. Québec Port Authority
4. Cleveland-Cuyahoga County Port Authority	27. Reformar
5. Cogema	28. Rigel Shipping Canada
6. CTMA Group	29. Rio Tinto Alcan
7. Duluth Seaway Port Authority	30. Saguenay Port Authority
8. Empire Stevedoring Company Limited	31. Saint Lawrence Seaway Development Corporation
9. Federal Marine Terminals	32. Seaway Marine Transport
10. Fednav Limited	33. Sept-Îles Port Authority
11. Groupe Desgagnés	34. Société des Traversiers du Québec
12. Hamilton Port Authority	35. Société du parc industriel et portuaire de Bécancour
13. Illinois International Port District	36. Société du port de Valleyfield
14. IMTT-Québec	37. The CSL Group
15. Les Élévateurs de Trois-Rivières	38. The St. Lawrence Seaway Management Corporation
16. Logistec Corporation	39. Thunder Bay Port Authority
17. Lower Lakes Towing Limited	40. Toledo-Lucas County Port Authority
18. McKeil Marine	41. Toronto Port Authority
19. Montreal Gateway Terminals Partnership	42. Trois-Rivières Port Authority
20. Montréal Port Authority	43. Ultramar
21. Ocean Group	44. Upper Lakes Group
22. Oceanex	45. Windsor Port Authority
23. Oshawa Harbour Commission	



### PARTNERS

Partners of the Environmental Program are companies or associations with a link to the marine sector which are not eligible to be participants, but which nevertheless wish to promote the Green Marine initiative.

#### THE CURRENT LIST OF PARTNERS IS AS FOLLOWS:

1. Answer North America	12. L.D.Technologies Inc.
2. Aspin Kemp and Associates	13. Lloyd's Register North America
3. Bell Marine & Mill Supply	14. Marine and Offshore Canada
4. Corporation des pilotes du Saint-Laurent Central	15. Marine Clean Ltd.
5. Dessau-Soprin Inc.	16. McAsphalt Industries Ltd.
6. EcologiQ	17. Premier Environmental Services Inc.
7. Georgian College's Great Lakes International Marine Training Centre	18. S.I.G.E.I.M. Inc.
8. Germanisher Lloyd	19. Star Brite Inc.
9. Human Resources Sectorial Committee of the Maritime Industry	20. Wärtsilä Canada
10. Innovation Maritime	21. Westpier Marine & Industrial Supply Inc.
11. Langlois Kronström Desjardins	



### SUPPORTERS

Supporters are organizations which support Green Marine either symbolically or through their services (examples include governments, municipalities and environmental groups).

#### THE CURRENT LIST OF SUPPORTERS IS AS FOLLOWS:

<b>Governments</b>	13. Ville de Matane
1. Ministère des Ressources naturelles et de la Faune du Québec	14. Ville de Port-Cartier
2. Ministère des Transports du Québec	15. Ville de Québec
3. Ministère du D�ev. durable, de l'Environnement et des Parcs du Qu�ebec	16. Ville de Sept-�iles
4. Transport Canada	<b>Environmental Organizations</b>
5. Environment Canada	17. Comit�e ZIP Les Deux Rives
6. Fisheries and Oceans Canada	18. Comit�e ZIP du Lac Saint-Pierre
7. Ontario Ministry of Transportation	19. Comit�e ZIP Saguenay
<b>Municipalities</b>	20. Comit�e ZIP Ville-Marie
8. City of Milwaukee Board of Harbor Commissioners	21. Ducks Unlimited Canada
9. Communaut�e m�etropolitaine de Qu�ebec	22. Great Lakes United
10. Promotion Saguenay	23. Les Amis de la vall�ee du St-Laurent
11. Soci�et�e de promotion �conomique de Rimouski	24. Nature Qu�ebec
12. Ville de B�ecancour	

Green Marine's guiding principles reflect the maritime industry's commitment to going beyond regulatory compliance and doing even more for the environment.

The Green Marine initiative is aimed at achieving a concrete and measurable improvement in the environmental performance of the St. Lawrence – Great Lakes maritime industry. Towards that end, Green Marine has adopted the following set of guiding principles, which all participants have committed themselves to pursuing:

- Demonstrate **corporate leadership** in the development and identification of best environmental practices (from a sustainable development perspective);
- Engage in responsible activities designed to **minimize environmental impacts**;
- **Continuously improve** environmental performance;
- Develop and promote **voluntary protection measures**;
- **Integrate sustainable development practices** that are technically and financially achievable;
- **Collaborate with governments and citizens' groups** in implementing the Environmental Program;
- Actively participate in an **integrated management** approach for the St. Lawrence-Great Lakes maritime corridor, allowing for consultation with local, regional, national and international stakeholders.



## **GREEN MARINE MANAGEMENT CORPORATION**

The Green Marine initiative is managed by the Green Marine Management Corporation (GMMC), which comprises eight Canadian and U.S. associations<sup>1</sup> that together represent close to 500 companies working in the maritime sector:

- American Great Lakes Ports Association
- Canadian Shipowners Association
- Chamber of Maritime Commerce
- Ontario Marine Transportation Forum
- St. Lawrence Shipoperators
- Shipping Federation of Canada
- St. Lawrence Economic Development Council (SODES)
- United States Great Lakes Shipping Association

The Green Marine Management Corporation has appointed the St. Lawrence Economic Development Council (SODES) as the manager of Green's Marine's day to day operations. SODES' specific tasks in this respect include implementing the Environmental Program, providing support to Green Marine members, coordinating Green Marine's environmental and technical committees, engaging in communications activities, and managing Green Marine's finances.

## **GOVERNANCE BOARD**

Corporate leadership is one of Green Marine's guiding principles and a key element in its success. Green Marine is headed by a Governance Board made up of the Presidents of the Environmental Program's participant companies<sup>2</sup>. The Board includes both Canadian and U.S. members, thereby highlighting the bi-national nature of the Green Marine partnership. The Governance Board meets formally once every year, and provides its members with an opportunity to be actively involved in developing the Green Marine initiative, implementing the Environmental Program, and determining its strategic direction.

## **EXECUTIVE COMMITTEE**

The Governance Board includes an Executive Committee composed of Green Marine's three co-Chairs, as well as the heads of several companies that have been active in the Green Marine initiative since its inception<sup>3</sup>.

## **ENVIRONMENT COMMITTEES**

The St. Lawrence and Great Lakes Environment Committees<sup>4</sup> were created in 2005 with a view to identifying the maritime industry's priority environmental issues for the St. Lawrence and Great Lakes regions, and developing tools to enable the industry to improve its global environmental performance.

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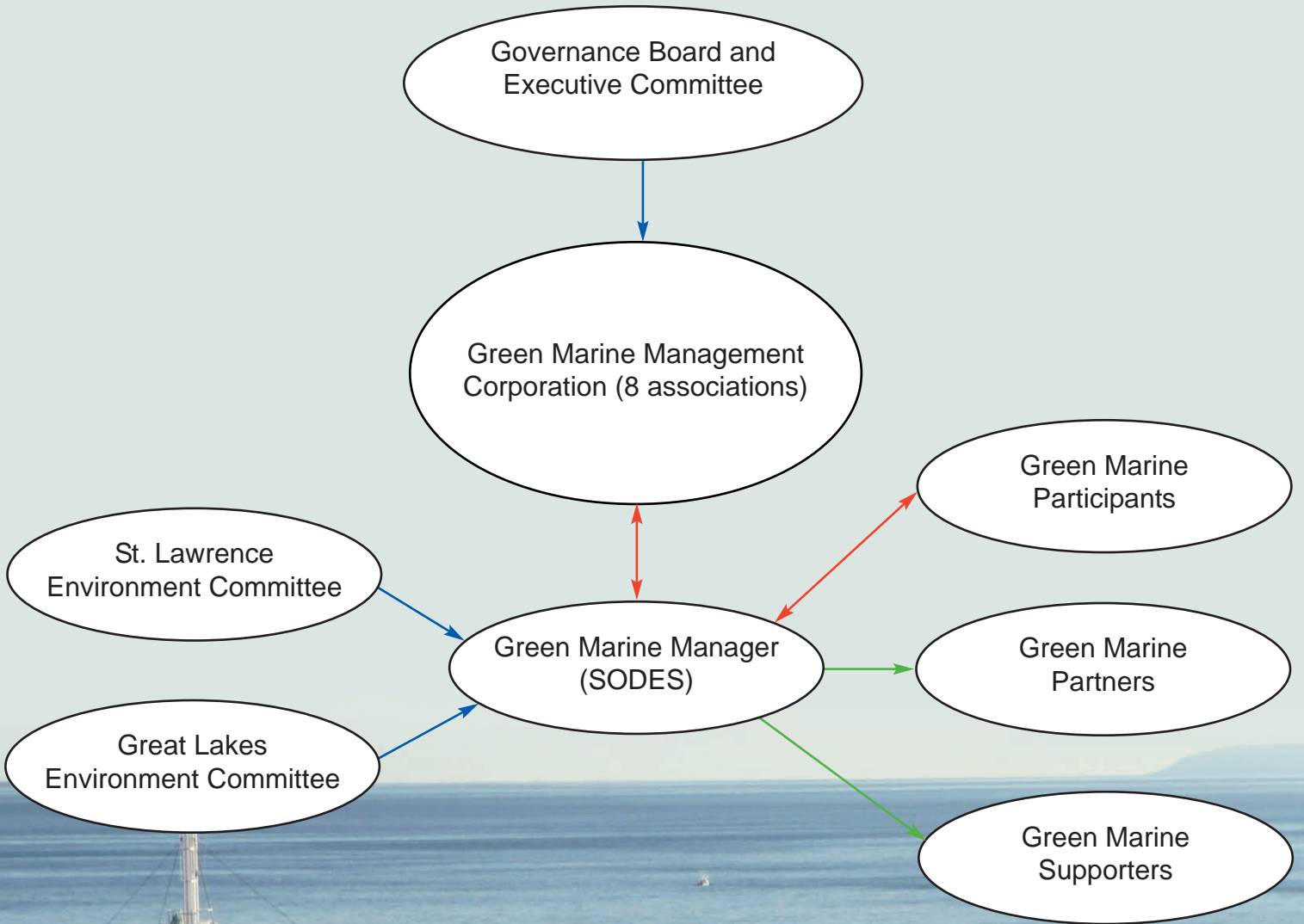
<sup>1</sup> For complete details regarding the 8 associations, see Annex A.

<sup>2</sup> For complete details regarding the structure of the Governance Board, see Annex B.

<sup>3</sup> For complete details regarding the Executive Committee, see Annex C.

<sup>4</sup> For complete details regarding the Environment Committees, see Annex C.

A diagram illustrating the structure of Green Marine can be found below.



→ **Since its launch, Green Marine has become an authority on sustainable development for the St. Lawrence – Great Lakes maritime industry.**

Green Marine has enjoyed a considerable amount of success in a relatively short period of time, including the successful recruitment of 45 participants, 21 partners and 24 supporters. Following is a summary of some of Green Marine's major activities and accomplishments over the last year and a half.

## **OCTOBER 2007 - LAUNCH OF THE ENVIRONMENTAL PROGRAM**

The public launch of the Green Marine Environmental Program took place in Quebec City during the 2007 edition of Quebec Marine Day. The event was attended by more than 80 individuals, including numerous media representatives, many of the program's participants and supporters, the three Green Marine co-chairs, and representatives from Transport Quebec and Environment Canada. The event also included a press conference to officially introduce the Environmental Program and its first cohort of participants and supporters to the public.

## **JANUARY 2008 - INCORPORATION OF GREEN MARINE**

Green Marine was formally incorporated under the name of the Green Marine Management Corporation, which comprises the associations that are responsible for managing the Green Marine initiative.

## **JANUARY 2008 TO MAY 2009 - COLLECTIVE ACTIONS**

Each issue targeted by the Environmental Program is accompanied by a series of actions to be carried out by the associations that make up the Green Marine Management Corporation (GMMC). These actions, which total 27, consist of orientations or positions that are of interest to the industry as a whole and may require governmental participation. Most of these actions either occur on a continuous basis or are difficult to quantify (e.g. promoting the implementation of specific programs or the ratification of international conventions). The GMMC associations undertook a variety of collective actions throughout 2008, which served as an important adjunct to the concrete measures implemented by the companies, ports and terminals that are participants of the Environmental Program.

## **FEBRUARY 2008 - THE FIRST GREEN TECH CONFERENCE**

Green Marine's first environmental conference on green technologies for marine transportation, entitled Green Tech for Shipping 2008, was a resounding success. Close to 120 participants attended the various sessions, and a survey conducted at the end of the conference indicated a high level of interest in making Green Tech an annual event. As a result, the second edition of Green Tech is being held in Toronto in May 2009.

## **JUNE 2008 - SELF-EVALUATION GUIDE**

Green Marine developed two guides – one for shipowners and another for ports and terminals – to help participants of the Environmental Program complete their first self-evaluations. These guides, which were distributed last June, are designed to help participants identify the level that their company has attained with respect to each of the environmental issues with which they are involved.

### **JUNE 2008 - ONTARIO MARINE TRANSPORTATION FORUM**

The Green Marine Management Corporation welcomed the Ontario Marine Transportation Forum as a member of its Board of Directors (thereby ensuring that the Green Marine initiative is more widely publicized in Ontario).

### **SEPTEMBER 2008 - GREEN MARINE PARTNERS CATEGORY**

Green Marine added a new “partners” category to its membership, comprising:

1. For profit organizations which do not operate ships, ports or terminals, but which have business links with the marine industry;
2. Not-for-profit organizations which have business relations with the marine industry or activities that are linked to the sector.

Both types of partners engage to promote Green Marine to their clients. They also pay an annual membership fee that allows them to use Green Marine “partner” logo.

### **SEPTEMBER 2008 TO MARCH 2009 - INFORMATION SESSIONS**

Green Marine organized several information sessions to help participants complete their self-evaluations. Five such meetings were held for ports and terminals (three in the Great Lakes and two in the St. Lawrence) and three for shipowners. Green Marine also held three follow-up meetings to answer questions arising from the self-evaluation process. A summary of all these meetings was subsequently sent to the program’s participants.

Information sessions for ports and terminals:

- September 10 (Great Lakes)
- September 24 (Great Lakes)
- October 8 (Great Lakes)
- December 5 (St. Lawrence)
- December 12 (St. Lawrence)

Information sessions for shipowners:

- November 19
- December 1
- December 15

Follow-up sessions (information sessions for participants following their self-evaluations):

- March 3-4-5

### **OCTOBER 2008 - QUEBEC MARINE DAY**

Green Marine was a topic of discussion during the meetings with parliamentarians that took place during the 2008 edition of Quebec Marine Day. Those meetings served as a forum for providing elected officials with information on the benefits of marine transportation, and on the principles of Green Marine and its Environmental Program.

### **NOVEMBER 2008 – CONFERENCE IN MARSEILLE, FRANCE**

Green Marine participated in an international conference on the ecological management of waste produced at sea, which was held in Marseille, France last November. The conference provided an opportunity to discuss the Green Marine Environmental Program, with particular focus on those aspects of the program that are linked to the management of on-board wastes such as oily water and cargo residues. The event also served as a vehicle for promoting Green Marine within the international marine community and establishing ties with other environmental initiatives and partnerships.

### **NOVEMBER 2008 – INTERNATIONAL MARITIME SYMPOSIUM**

Another opportunity to present the Green Marine Environmental Program occurred at the International Maritime Symposium held in Halifax this past November. The symposium was organized by Transport Canada as part of the first Canadian edition of the IMO's World Maritime Day.

### **DECEMBER 2008 – GREAT LAKES INFORMATION NETWORK'S WEBSITE OF THE MONTH**

In December 2008, Green Marine was selected as the website of the month by the Great Lakes Information Network (GLIN), which links hundreds of organizations serving the St. Lawrence - Great Lakes region. Every month, GLIN shines a spotlight on the website of one of its partner organizations, and establishes a web-based link that promotes a steady and reciprocal flow of information among stakeholders within the GLIN network. By virtue of being named December's site of the month, the Green Marine website has benefitted from more hits and more recognition across the web.

### **JANUARY TO MAY 2009 – PROVIDING SUPPORT TO PARTICIPANTS**

Green Marine provided participants with an extensive support in completing their first self-evaluations. This support took a variety of forms, including e-mail exchanges, telephone conversations and individual visits.

### **MARCH 2009 – PILOT PROJECT TO TEST EXTERNAL AUDIT PROCESS**

Several Green Marine participants (the Montreal Port Authority, the Hamilton Port Authority, Federal Marine Terminals, Fednav, and The CSL Group) agreed to take part in a pilot project (which got underway on March 23, 2009), whereby they submitted their self-evaluations to a third party (Lloyd's Register Quality Assurance) in order to verify their compliance with the standards required by Green Marine. This pilot project was designed to ensure the efficiency of the external audit process that all participants will have to follow as of their second year in the program.

### **APRIL 2009 – AQUATIC INVASIVE SPECIES WORKSHOP**

Green Marine was a presenter at the 60th International Conference on Aquatic Invasive Species (held in Montreal from April 20 to 23, 2009), where it discussed the Environmental Program as well as the performance indicator related to aquatic invasive species.

### **APRIL 2009 - DEADLINE FOR FIRST SELF-EVALUATIONS**

Participants of the Environmental Program had until April 1, 2009 to provide the Green Marine Coordinator with summaries of their self-evaluations with respect to their environmental performance. Green Marine is pleased to announce that all participants submitted such a report within the time frame prescribed.

### **MAY 2008 - PRESENTATION OF FIRST OFFICIAL CERTIFICATIONS**

The first cohort of the Environmental Program's participants received their official certifications during the second Green Tech conference in Toronto on May 20. Green Marine also profited from this occasion to publicly announce the first global results of the marine industry's environmental performance with respect to the six environmental issues targeted by the program.



**Regulation of the maritime industry has become increasingly stringent throughout the world, with new environmental standards coming into effect on a yearly basis. In order to remain a leader on environmental matters, the maritime industry is strengthening its environmental performance by going beyond regulatory compliance and embracing the continuous improvement principles of the Green Marine Environmental Program.**

## **GREEN MARINE OBJECTIVES**

Green Marine established a number of concrete objectives when it launched the Environmental Program in October 2007:

- Obtaining participation from a majority of relevant industry stakeholders;
- Validating the program's performance indicators and identifying any necessary amendments;
- Obtaining an average global result equivalent to level 2.

Green Marine is pleased to report that each of these objectives has been met. Since the program's launch, the number of Green Marine participants has increased from 25 to 45, the program's performance indicators have been tested, and all participants have returned their self-evaluation reports.

## **ANALYSIS OF THE EVALUATION PROCESS**

Given the level of specificity and detail found in the Green Marine Environmental Program, the program's first year of implementation provided an important opportunity to evaluate the practicality and concrete applicability of its measures. Thus, the first-self evaluation process served as both a means of validating the program's quality and of identifying any necessary adjustments to its performance indicators. The latter is particularly important because it is essential that the performance indicators provide a series of realistic, concrete and progressive measures that participants can implement in order to improve their environmental performance.

Now that the first self-evaluation period is over, we can report that participants found the vast majority of criteria related to the performance indicators to be relevant and easy to understand. Nevertheless (and not unexpectedly) some problematic criteria were identified, and these will be corrected and modified over the coming months.

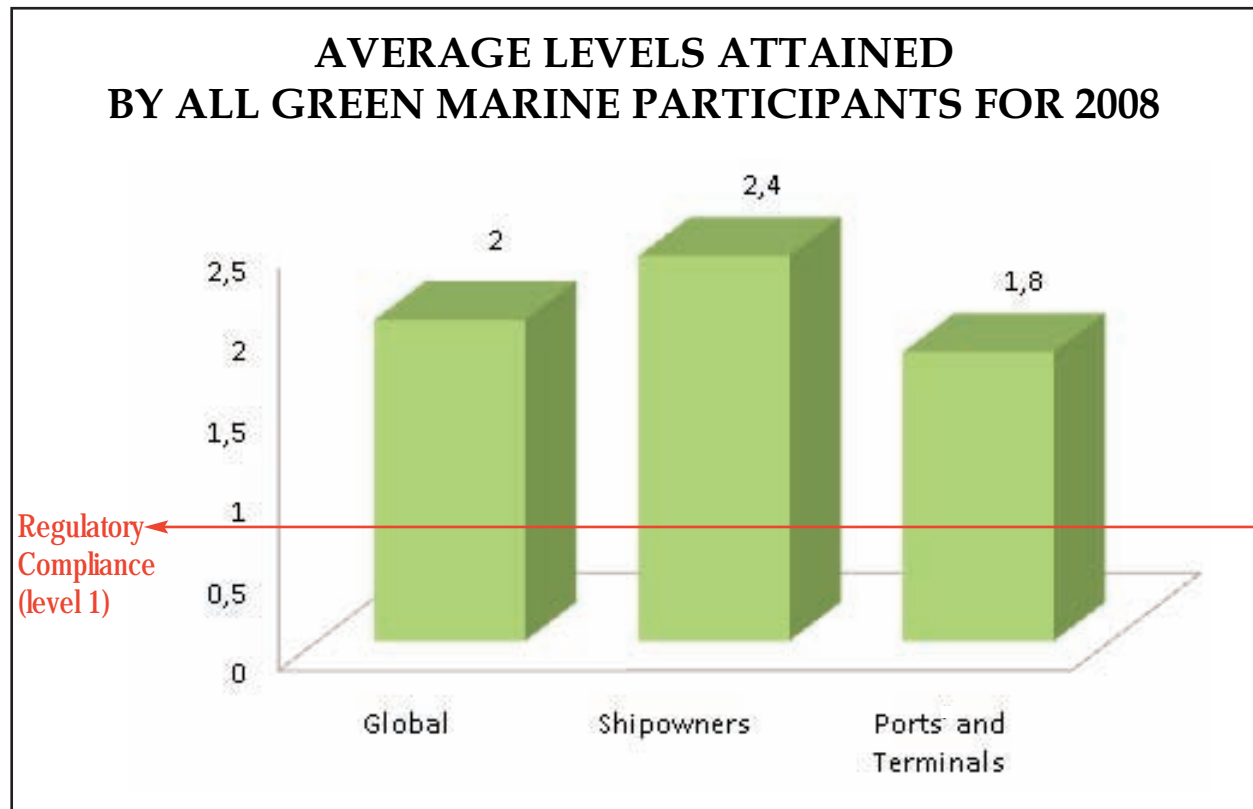
## **ANALYSIS OF GLOBAL RESULTS - 2008**

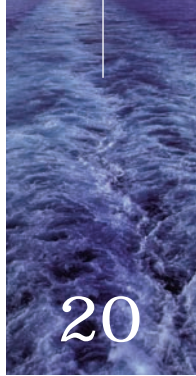
The tables on the following pages indicate the average global results attained by the first cohort of participants of the Green Marine Environmental Program. These results are based on the self-evaluations that all participants completed with respect to their environmental performance for 2008. Green Marine's objective in the medium term is for a majority of participants to reach level 3 two years after having joined the program. As announced

when the program was launched, participants' individual results will not be made public during the first implementation year, but the results that Green Marine publishes will become more detailed as time goes on.

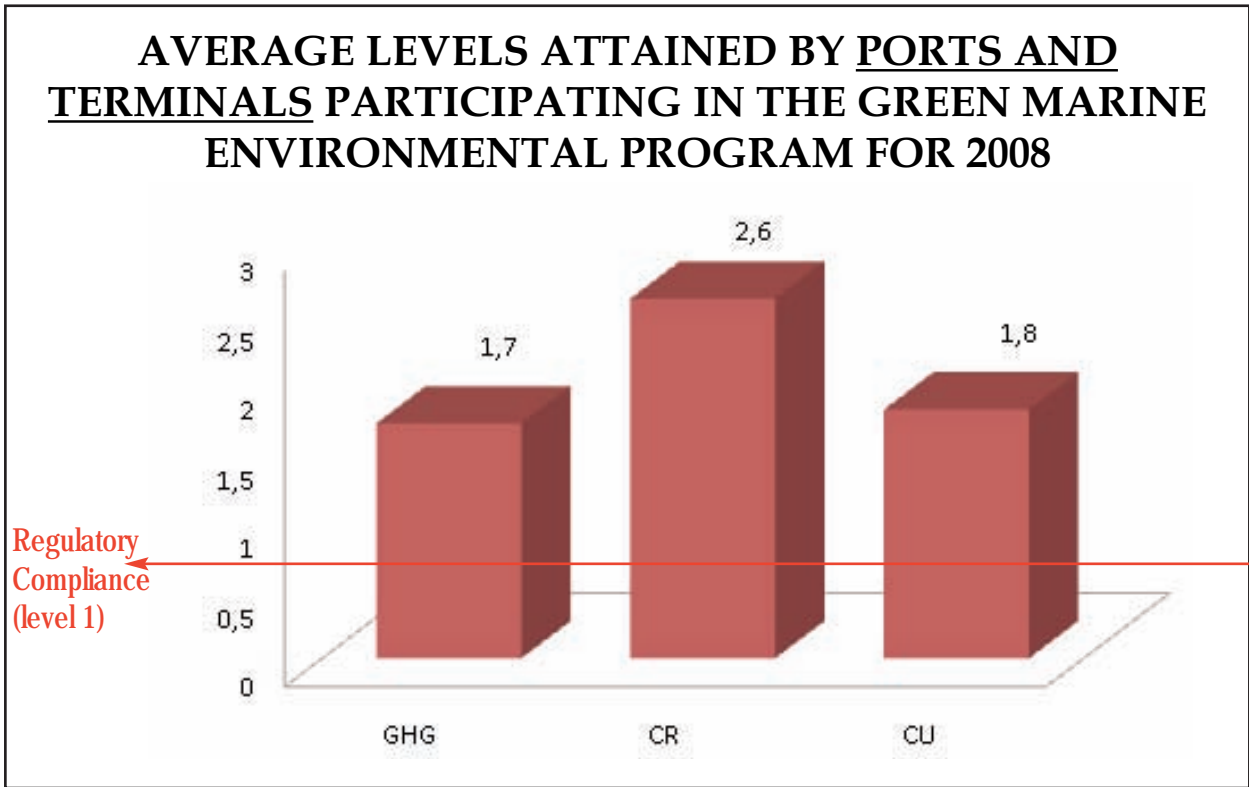
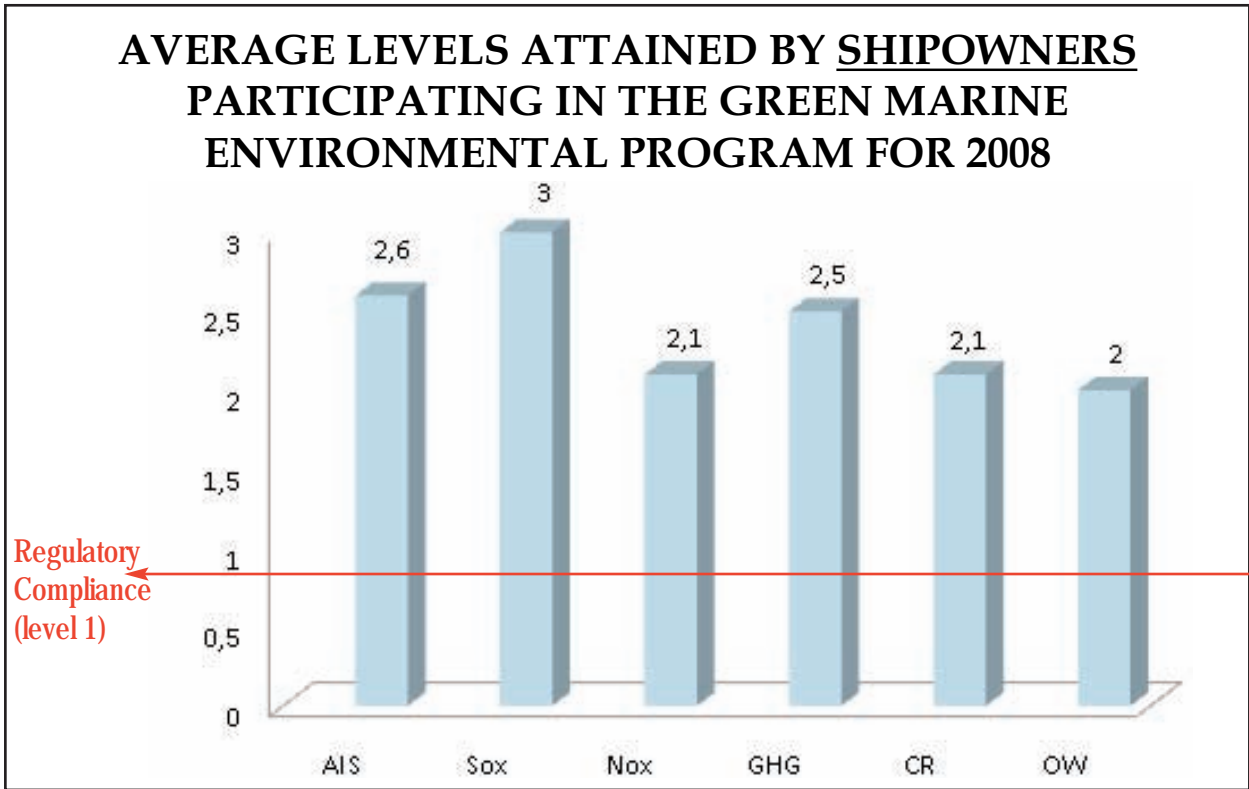
As far as the program's first year of implementation is concerned, participants obtained an average global result corresponding to level 2 for all issues combined. Although these results are encouraging (especially with respect to the objectives established at the program's outset), they also create a great deal of possibility for improvement, which fits perfectly with the program's overall objective of mapping an ambitious and demanding path for participants to follow.

When examined more closely, the results reveal a significant difference in the average attained by shipowners (2.4) vs that attained by ports and terminals (1.8). This is due to two main factors. First, shipowners have been subjected to environmental requirements for a longer time than ports and terminals, due to the many national and international regulations and prevention programs that have been developed over the years. Second, the majority of ports that are participants of the Environmental Program are small organizations with less than ten employees, and can only devote a limited number of resources to implementing the program's requirements. The initial evaluation process proved to be very useful for many such ports, by identifying the measures they need to implement in order to reach level 2 during the next evaluation process.





The two diagrams below show the average levels attained by shipowners and by ports and terminals for the specific environmental issues targeted by the Green Marine Environmental Program.



**Legend:**

- AIS: Aquatic invasive species
- SOx: Pollutant air emissions: sulphur oxide
- NOx: Pollutant air emissions: nitrogen oxide

- GHG: Greenhouse gases
- CR: Cargo residues
- OW: Oily water
- CU: Conflicts of use in ports and terminals

# ANALYSIS OF RESULTS BY ENVIRONMENTAL ISSUE – 2008

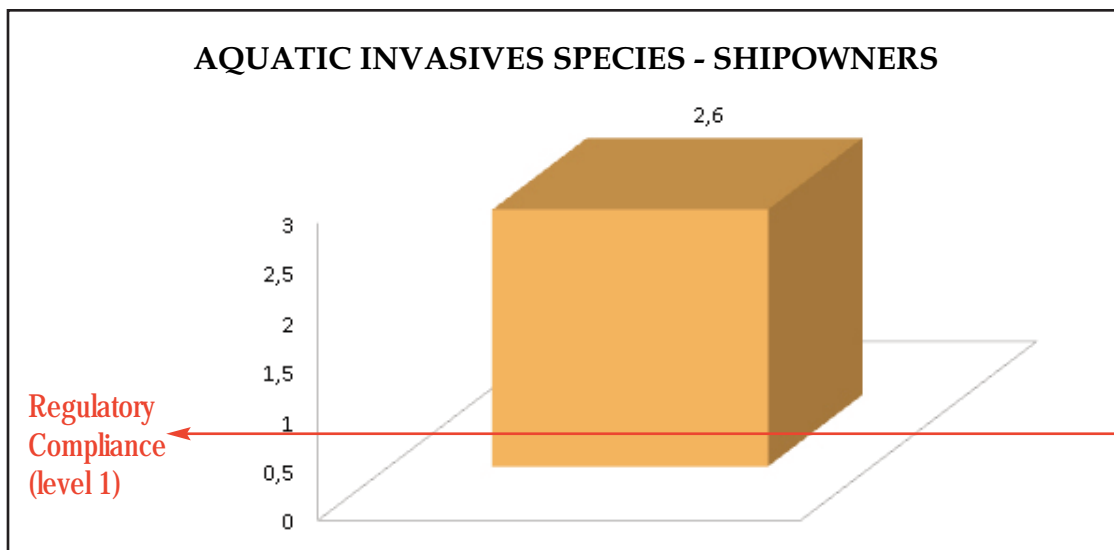
## AQUATIC INVASIVE SPECIES

The risk of introducing and propagating aquatic invasive species by means of ships' ballast water has been identified as the maritime industry's top priority issue, which is why the Environmental Program establishes a number of stringent measures in this respect. The performance indicator for this issue encourages all shipowners, whether domestic or international, to implement safer practices and introduce new technologies that will ultimately enable them to comply with (or even exceed) future requirements under the *International Convention for the Control and Management of Ships' Ballast Water and Sediments*.

The average level that shipowners attained for this issue is 2.6, which indicates that the majority have already implemented practices that go beyond regulatory compliance.

These results could have been even higher had it not been for a number of inaccuracies related to the performance indicator. Indeed, the self-evaluation process revealed that one of the level 3 criteria as well as the level 4 criteria for domestic shipowners should have been more precise, if not completely re-formulated. For example, domestic shipowners are required to analyze samples of ballast water sediments in order to attain level 4. However, developing a standardized methodology for conducting such an analysis has proven to be extremely problematic. A technical committee will examine this issue with a view to developing and implementing a solution for 2009.

The recent coming into force of new ballast water management regulations in certain U.S. states also presents a challenge to Green Marine, given that the performance indicator is based on the requirements of the IMO Ballast Water Convention. In view of the fact that a total of ten states and provinces from two different countries border the St. Lawrence – Great Lakes region, Green Marine will have to be very cautious when deciding whether to modify its criteria on the basis of new regulations in any of these jurisdictions. Indeed, Green Marine plans to await the outcomes of the various judicial challenges that are currently underway before re-evaluating its performance indicator for aquatic invasive species.

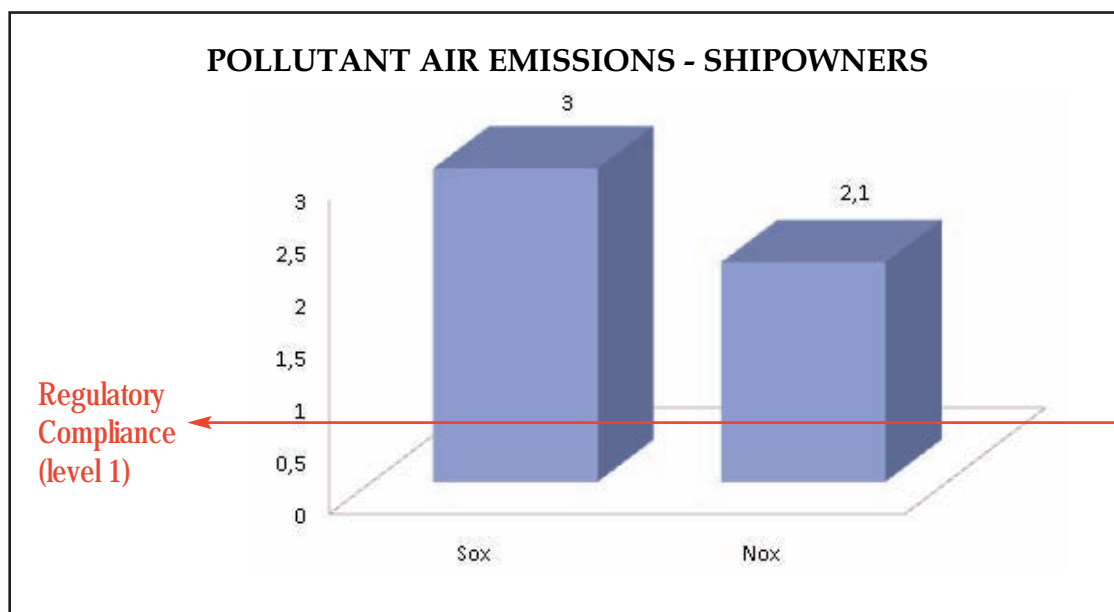


## POLLUTANT AIR EMISSIONS

The Environmental Program contains two distinct performance indicators to address the two main air pollutants emitted by ships; namely, sulphur oxides (SO<sub>x</sub>) and nitrogen oxides (NO<sub>x</sub>). Other pollutants such as particulate matter and volatile organic compounds, which are not covered by the *Marpol Convention* and for which the development of reduction technologies is still at an early stage, will be integrated into the program at a later stage.

**Sulphur oxide emissions** are directly linked to the level of sulphur in the fuel used. Aside from measures aimed at reducing fuel consumption, the performance indicator linked to this issue encourages the use of higher quality fuel or the implementation of technologies that would allow for an equivalent reduction in emissions. This is the issue for which participants attained the highest average result of 3. This means that a significant number of shipowners have not only surpassed regulatory compliance and implemented level 2 measures on their ships (which includes documenting fuel consumption, optimizing vessel loading, and respecting voluntary speed reduction measures), they have also carried out an annual inventory of their SO<sub>x</sub> emissions. This issue's high result is also due to the fact that some companies use marine diesel (a low sulphur fuel) on an exclusive basis.

**Nitrogen oxide emissions** depend more on engine design than on fuel quality. The criteria proposed in the NO<sub>x</sub> performance indicator surpass the standards that are already in place, as well as those that are under discussion at the IMO. However, participants who wish to reduce their NO<sub>x</sub> emissions have difficult choices to make, given that the majority of current NO<sub>x</sub> reduction technologies also have the effect of increasing both fuel consumption and greenhouse gas emissions. The average level that shipowners attained for this issue is 2.1, which is significantly lower than the level attained for SO<sub>x</sub> emissions. This disparity is due to the fact that the two criteria associated with level 3 – completion of a NO<sub>x</sub> emissions inventory and implementation of a periodical measurement system – have turned out to be more difficult to achieve than anticipated. Not only has it proven to be impossible to find meaningful coefficients for evaluating the emissions produced by various engine types (despite intensive research efforts), we have also found the instruments for measuring NO<sub>x</sub> emissions to be both scarce and costly. This issue will therefore be re-evaluated by a technical committee which may recommend modifications for 2009.



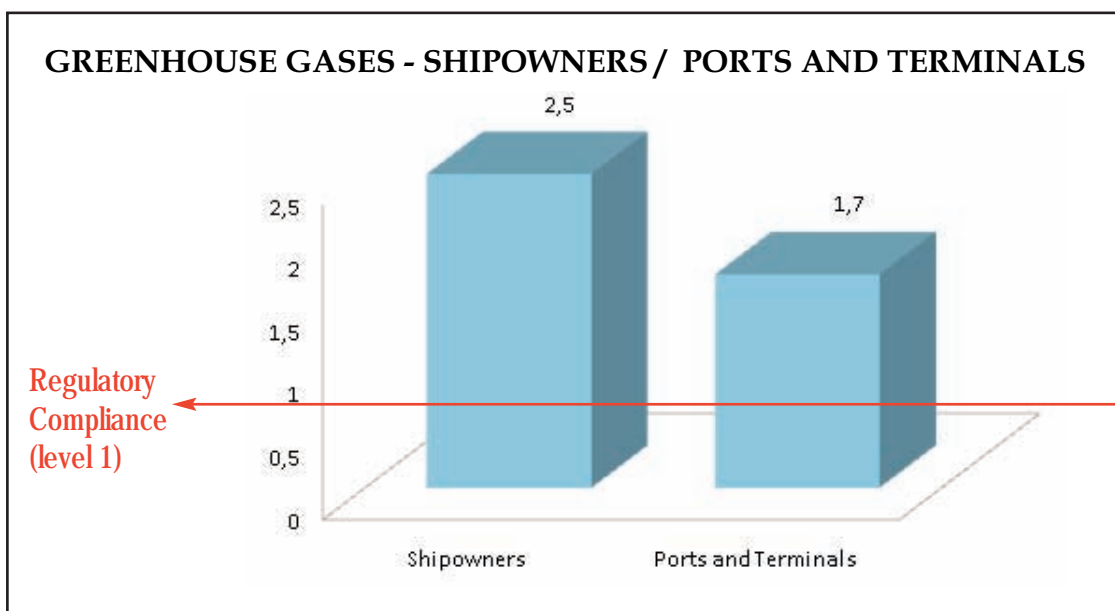
## GREENHOUSE GASES

The effect of greenhouse gases is the most pressing environmental problem facing our planet. Although the amount of GHGs emitted by the marine mode is lower than that produced by other modes (on a tonne-kilometre basis), the Green Marine Environmental Program encourages participants to reduce their GHG emissions even further.

The performance indicator linked to this issue targets lower fuel consumption as the primary means of reducing GHGs. Towards that end, participants must implement an energy performance plan and complete a GHG emissions inventory in order to attain level 3, after which they must significantly improve their energy efficiency in order to attain levels 4 and 5.

The average level that shipowners attained for this issue is 2.5. This means that a majority of shipowners have implemented measures to reduce fuel consumption on all their ships (level 2) and that several have also completed an inventory of their GHG emissions (level 3). Participants appear to have understood this particular performance indicator very well, and to have appreciated the methodological tools provided in the self-evaluation guide.

The average level that ports and terminals attained for this issue is 1.7, which indicates that the majority are still in the process of implementing the best practices that are required for level 2 (e.g. limiting engine idling in vehicles, promoting sustainable transportation among employees, and reducing congestion and waiting times during heavy traffic). Among those ports that did reach level 2, a number were unable to move to level 3 due to the logistical challenges of carrying out a GHG emissions inventory. This is due to the fact that the majority of port administrations have more of a property management role than an operational role, meaning that the tenants to whom they lease their property (and who actually operate the cargo handling equipment), are better positioned to reduce emissions than the ports themselves. In view of the foregoing, Green Marine will work to develop a common methodology for conducting an emissions inventory that could be applied to the whole of a port's territory.

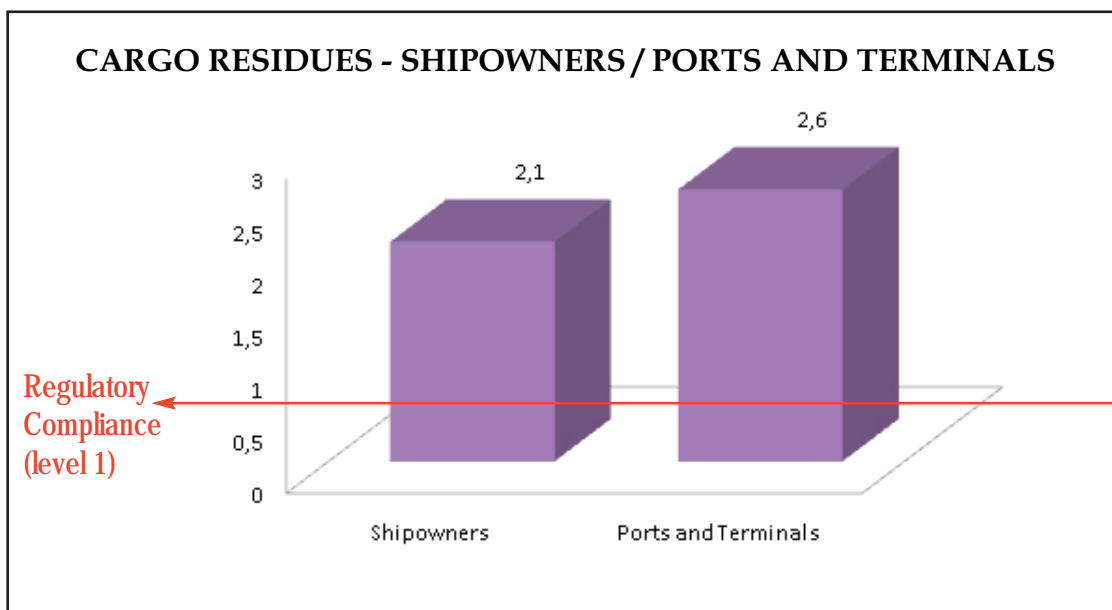


## CARGO RESIDUES

Given the scarcity of quantitative data on the environmental impact and quantitative effect of cargo residue discharges in the St. Lawrence and Great Lakes, the acquisition of such data is a priority item in the Environmental Program's action plan. Towards that end, the performance indicator for this issue first requires participants to carry out inventories and adopt best practices, as per level 2. This is followed by collaborative efforts between shipowners and terminal operators to reduce the production and discharge of cargo residues during loading and unloading operations, as per level 3; and by the development of technological solutions and the adoption of corporate policies to eliminate cargo residue discharges altogether, as per levels 4 and 5.

The average level that shipowners attained for this issue is 2.1. This indicates that a majority of owners have not only surpassed regulatory compliance, but have also implemented best practices on all their ships. Examples of such practices include sweeping cargo residues onto the ship's bridge for disposal at the dock, completely rinsing ships' holds only when necessary, and reducing the potential for cargo loss by reducing unloading rates. No shipowner was able to go beyond level 3 because the level 4 criteria (which require companies to adopt a "zero discharge" policy with respect to all cargo residues with a potentially harmful impact on the aquatic environment) proved to be impossible to implement as envisioned. The problem with this criteria lies with the fact that there is no definitive (or sufficiently rigorous and unanimous) list of "potentially harmful" substances that could be used as the basis for such a policy. As a result, a potential replacement for this criteria will be submitted to a technical committee, with a view to being implemented in 2009.

The average level that ports and terminals attained for this issue is 2.6. This indicates that the majority have not only moved beyond regulatory compliance (level 1), but have also completed an inventory of the equipment and practices linked to the production of cargo residues (level 2), and are now in the process of adopting a cargo residue management plan (level 3). It is worth noting that although this performance indicator was initially meant to apply to both port administrations and terminal operators, it quickly became clear that ports had little or no ability to directly influence operational practices related to cargo residues. As a result, Green Marine informed participants that the indicator would not apply to port administrations unless they are directly involved in operating (bulk) cargo loading and unloading equipment. In addition, a new issue – run-off waters – will be added in 2010 with a view to giving port administrations a more active role in this matter.

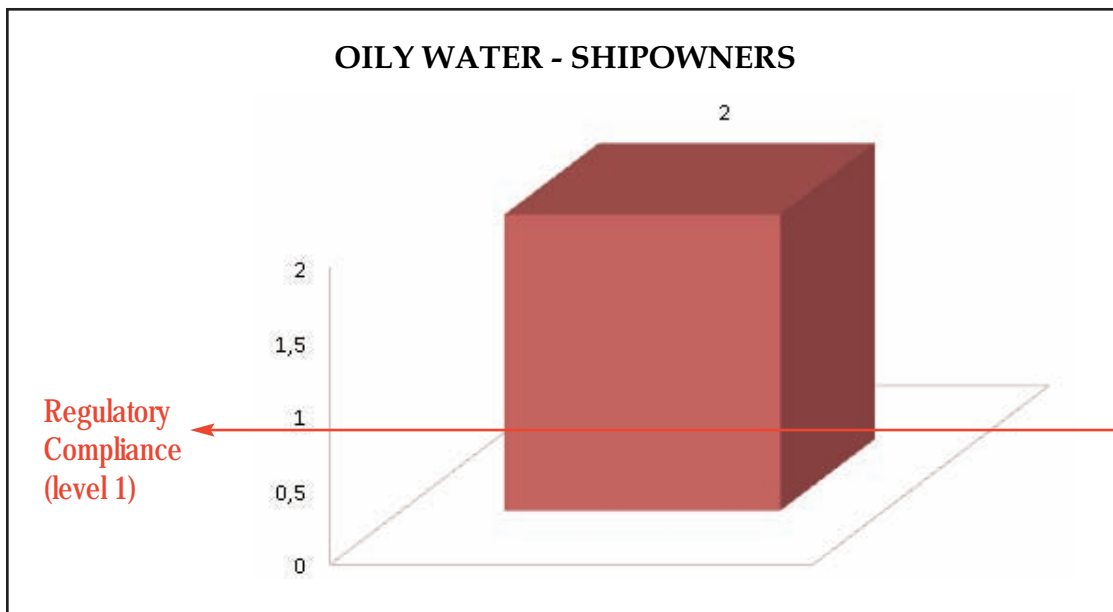


## OILY WATER

The equipment on board ships (engines, pumps, piping, etc.) uses or carries different types of fluids (fuel, oil, water). In certain areas of the ship, and in the engine room in particular, oil can mix with water during normal operations or when routine maintenance is taking place, making it necessary to treat the contaminated water before it can be discharged from the ship. Thus, ensuring the proper functioning of the equipment that is used for the treatment of oily water is crucial to avoiding the risk of pollution, however minimal.

The performance indicator for this issue is based on the implementation of a high number of best practices and on improvements to the technologies used in ships' engine rooms. For example, the implementation of an integrated oily water treatment system, as required for levels 4 and 5, ensures a more efficient separation of fluids at their source, which is the most effective method of reducing the risk of accidental discharges.

The average level that shipowners attained for this issue is 2. This means that a majority have implemented between 6 and 9 of the best practices associated with level 2 on board their ships. These practices consist of increasing and enhancing measures for controlling, verifying and ensuring the proper functioning of equipment that is used to treat oily water. Although participants did not question the relevance of the criteria associated with this performance indicator, they did request a number of editorial clarifications in order to limit possible ambiguities in interpretation. These clarifications will be implemented in 2009.

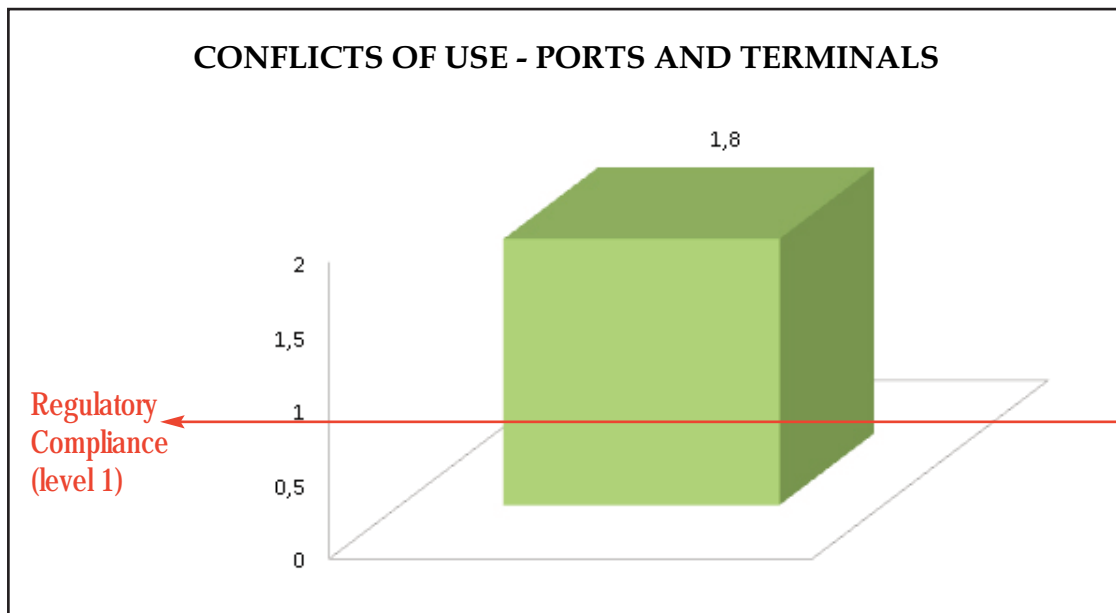


### CONFLICTS OF USE IN PORTS AND TERMINALS

The extensive economic and industrial activity that takes place at ports makes them susceptible to generating dust, noise, light and odour, all of which may be perceived as irritants by individuals who live near port installations. The performance indicator for this issue aims to reduce existing and potential irritants through a series of concrete measures. The performance indicator also includes a number of criteria related to communications, and the establishment of a collaborative relationship between port users and the public.

The average level that ports and terminals attained for this issue is 1.8, which means that the majority are well on the road to implementing the measures recommended in level 2.

It is worth noting that some participants expressed concern over the level 3 criteria that require them to obtain dust and noise samples. Participants noted that this would be difficult to do and requested additional technical details about this measure. Participants also suggested that the criteria related to this particular issue be expressed in more quantitative terms whenever possible. These amendments will be carried out in 2009.



**The future of the maritime industry depends on its commitment to always going further in environmental matters and continuously strengthening its environmental performance.**

Green Marine's coming year will be just as full of activity as the previous year. The following is a summary of the main activities that Green Marine has planned for the future, all of which are designed to continue strengthening the environmental performance of the St. Lawrence – Great Lakes maritime industry and ensuring that the Green Marine Environmental Program obtains as much exposure as possible.

## **EXTERNAL AUDIT PROCESS**

This is a pivotal moment in the evolution of the Green Marine initiative because participants of the Environmental Program will have to undergo a third party audit at the end of their second year. The unveiling of those results in 2010 will represent another important step in establishing the program's credibility.

The process for conducting these external audits will be developed and refined throughout 2009. The results of the pilot projects that several participants took part in earlier this year will be extremely helpful in identifying the key elements of the verification process and the steps that companies should undertake when preparing for an auditor's visit. The pilot projects also provided participants with an opportunity to better understand the Environmental Program's requirements and identified a number of elements in the performance indicators that require improvement.

The external audit process is an essential step in the implementation of the Green Marine Environmental Program. It will encourage participants to better define and quantify their environmental objectives and to support them with documentary and other evidence. Indeed, participants who took part in the pilot projects indicated that the expectation of (and consequent need to prepare for) a third party audit was extremely useful in terms of helping them plan their long-term environmental objectives and integrate those objectives into their environmental management systems.

## **PERFORMANCE INDICATORS**

The indicators will undergo a number of modifications based on the results of the first self-evaluation process. Details regarding such modifications can be found on page 21 of this report, in the section entitled "Analysis of Results by Environmental Issue – 2008".

### **EQUIVALENCE PROGRAM**

Throughout 2008, Green Marine has been developing an equivalence program for international shipowners, which identifies links between the requirements of the Green Marine program and those of other international environmental programs and standards, such as Clean Cargo Working Group, Green Award, ISO 14001 and the ISM Code. The equivalence program, which should be completed in 2009, will help recruit international shipowners to the Green Marine Environmental Program.

### **NEW PRIORITY ENVIRONMENTAL ISSUES**

The Great Lakes Environment Committee met in 2008 to develop a list of environmental issues for potential integration into the Green Marine Environmental Program. The Governance Board subsequently chose two of those issues – run-off from port operations and the risk of oil and chemical spills - for inclusion in the program. A U.S. researcher from Indiana's Purdue University has been working with Green Marine for the past year to identify the best practices that are already associated with these issues and develop new performance indicators. Green Marine will also work to extend the scope of some of the Environmental Program's current issues, such as the identification of air emissions other than GHGs in ports and terminals, the identification of other types of air emissions for shipowners (particulates, COV), and to introduce new issues such as stern tube oil pollution.

### **CANADIAN SAILINGS - SPECIAL EDITION**

Beginning in the fall of 2009, Green Marine will collaborate with "Canadian Sailings" magazine by publishing two special editions (one in the spring and another in the fall). These publications will extend Green Marine's reach within the St. Lawrence and Great Lakes and provide even more information to the maritime industry. Green Marine will also use these publications to publicize its annual Green Tech conference on environmental technologies for the shipping industry and to promote the Environmental Program in general. More than 7400 copies of these special editions will be distributed to various stakeholders in Canada, the U.S. and Europe.

### **GREEN TECH FOR SHIPPING 2010**

Green Marine will hold its third Green Tech conference on environmental technologies for the maritime industry in Montreal during the spring of 2010. Based on the success of previous years, the conference will provide another opportunity to present new technologies and bring Green Marine members together.

### **RECRUITMENT OF NEW MEMBERS**

Green Marine will continue to expand its membership by working to recruit new maritime industry members from the St. Lawrence – Great Lakes in both Canada and the U.S.

## INTERESTING FACTS AND FIGURES

It is an established fact that marine is one most efficient and environmentally-friendly modes of transporting goods on the planet. To illustrate:

- **Greenhouse gas emissions from ships** represent **one-tenth** of those generated by trucks, and **one-half** of those produced by trains.
- Using a single litre of fuel, a **ship can transport goods for a distance of 241 kilometres**, as compared to 95 kilometres for a train and 28 kilometres for a truck.
- **Ships** consume only **20 to 30 percent of the fuel** that a truck would need to transport the same amount of merchandise.
- The **marine mode produces less noise pollution** than the road and rail modes.
- Shortsea shipping (**SSS**) is recognized as being **efficient, safe and environmentally friendly**. SSS is the ideal solution to problems linked to road congestion, highway safety, conservation of the highway network and environmental problems such as greenhouse gas emissions.
- A **ship** can transport the same amount of cargo as **870 trucks combined**.



## → In environmental matters, one must lead by example.

You will find below a series of good news stories about environmental initiatives undertaken by Green Marine participants, supporters and partners. If you are part of such an initiative and wish to share it with others, please write us at [mireille.gagne@AllianceVerte.org](mailto:mireille.gagne@AllianceVerte.org).

### NEW ENVIRONMENTAL TRAINING FOR PORTS

The Human Resources Sectorial Committee of the Maritime Industry (CSMOIM) is developing an environmental training course for St. Lawrence ports. The two-day course, which is being developed by the firm of Genivar, will enable ports, terminals, stevedores and other companies involved in managing and operating port equipment and infrastructure to improve their environmental knowledge and develop better tools. This initiative is an ideal fit for the Green Marine Environmental Program, as it will focus on evaluating environmental footprints, implementing best practices and improving performance. If there is sufficient interest, the course may also be translated into English and offered to ports in the Great Lakes.

### ALGOMA CERTIFIED ISO 14001

On June 30, 2008, Algoma Tanker Ltd.'s integrated management system (IMS) was certified to ISO 14001, as a result of which the company is now compliant with the requirements of both ISO 9001 and ISO 14001. The system was audited by Lloyd's Register Quality Assurance during a three day audit of the ATL Office and a one day shipboard audit of the Algosea and Algosar. This certification is a key element in Algoma's continuing efforts to manage and reduce its environmental impacts, as is its participation in the Green Marine Environmental Program. Indeed, the environmental performance targets established by Green Marine will play a key role in supporting the continuous improvement process required by ISO 14001. By combining these two systems, Algoma has gone one step further in environmental matters and is doing even more for the environment.



### THE GREAT SHIPS INITIATIVE - STRENGTHENING THE HEALTH OF THE SYSTEM

The Great Ships Initiative (GSI) is a collaborative effort designed to address the problem of ship borne aquatic invasive species in the St. Lawrence-Great Lakes system. GSI focuses on research and independent testing of environmental technologies, financial incentives, and continuous surveillance of ports and harbours. It also supports the implementation of ballast water treatment systems on board foreign ships transiting the St. Lawrence and Great Lakes through the provision of financial and technical assistance. Several Green Marine participants, partners and supporters are members of this initiative.

## ÉNERGIA AWARDS: A DOUBLE COUP FOR ALUMINERIE ALOUETTE



Aluminerie Alouette was honoured at the 19th annual Énergia Awards in Montreal on November 13, winning two trophies in the *Integrated Management and Transport* categories. The company transported 220,000 tonnes of aluminum ingots on the “Alouette Spirit” in 2007 (a barge which it launched in 2005), thereby alleviating congestion along route 138 and reducing greenhouse gas (GHG) emissions. This project was the result of a partnership between McKeil Marine and Logistec Stevedoring, both of whom, along with Aluminerie Alouette, are Green Marine participants. Aluminerie Alouette also won SODES’ St. Lawrence Award in 2006, not only for putting the Alouette Spirit into service, but also for its overall leadership in the project.

## FEDNAV AND CSL TAKE AN ADDITIONAL STEP FOR THE ENVIRONMENT



During the course of 2008, two Green Marine participants again set an example and showed their leadership in

environmental matters. Fednav decided to communicate its environmental policy to the public, thereby demonstrating its commitment to sustainable development; while The CSL Group publicly shared both its environmental policy and its first annual report on the environment. These two initiatives are a first and clearly show that the environment remains a priority issue for the St. Lawrence – Great Lakes maritime industry.

## THE PORT OF MONTREAL OPENS ITS DOORS TO THE PUBLIC

The Montreal Port Authority held a very successful open house on August 31, 2008. Entitled “Port in Your City,” the event provided the general public with an opportunity to discover the port’s facilities, visit port areas that are not normally accessible to the public, and better understand the strategic and economic importance of the port’s activities. More than 100,000 people participated in the event. The initiative also fulfilled one of the criteria of the Green Marine Environmental Program, which is to further sensitize neighbouring populations to port and terminal operations.



### CSL ROLLS UP ITS SLEEVES FOR THE ENVIRONMENT!



To mark the occasion of World Oceans Week, some thirty employees from The CSL Group joined forces to clean the shores of Ile Charron (Montreal), thereby demonstrating an exceptional commitment to both the environment and their community. The group cleaned approximately 2.2 kilometres of shoreline and collected more than 1,000 pounds of garbage. The trash, which was put into 42 garbage bags and 15 recycling bags, included bottles, corks, cans, cigarette butts, fishing lines and construction materials.

### BUNGE OF CANADA'S ENVIRONMENTAL MONITORING SYSTEM

Since 2007, Bunge has been using a new environmental monitoring system that serves as a database which allows the company to concretely identify and track all of its environmental tasks - from renewing permits, to obtaining maintenance records for its anti-dust equipment, to determining which dust-prone sectors need to be cleaned. This data is also maintained in an archive, which has proven to be a very useful tool for conducting environmental audits and providing historical overviews. Moreover, the system requires a total of thirty environmental issues to be annotated on a regular basis, thereby ensuring that these issues are followed up on a monthly basis. In 2008, as part of its sustainable development efforts, the terminal also implemented an employee training program on the environment, health, and how to control infestations.

### THE ST. LAWRENCE SEAWAY: STANDARDS THAT ARE AMONG THE HIGHEST IN THE WORLD

On May 5 and 6, 2008, the Canadian Seaway, the U.S Seaway and Fednav (all Green Marine participants) organized a demonstration of a ballast water inspection at St. Lambert Lock. This media event drew particular attention to the regulatory regime for ballast water management in the Great Lakes, which is among the most rigorous in the world. The event also showed that ballast water inspections are one of a number of measures that Transport Canada, the Canadian Coast Guard and the two Seaway corporations have implemented in order to control aquatic invasive species. Other measures revolve around ballast water exchange procedures, and include such requirements as the need to maintain detailed documentation regarding ballast operations, and to ensure that ballast water exchange takes place in very deep waters.



### AN ENVIRONMENTAL POLICY FOR THE PORT OF TROIS-RIVIERES



The Trois Rivières Port Authority implemented a new environmental policy in August 2008. The policy involves the entire port community and is accompanied by an implementation guide to help users identify priorities, establish appropriate targets and formulate action plans. The policy is based on a collaborative approach between the Trois-Rivières Port Authority and its users, and aims to reduce the environmental impact of the port's operations by progressively improving its practices and facilities.

### **AN EVEN GREENER INITIATIVE FOR THE PORT OF HAMILTON**

In the summer of 2007, the Hamilton Port Authority paved and graded an 8-acre site at Pier 15, which was previously a dusty gravel lot populated with old warehouses. This “paved” the way for the installation of a grease and grit interceptor (8 feet in diameter and over 12 feet deep) that will allow for the passage of storm water. This initiative will help protect the water in Hamilton Harbour and reduce the amount of dust created by the port’s truck traffic.



# Annex A

## Green Marine Management Corporation

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UNITED STATES GREAT LAKES  
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# Annex B

## Green Marine Governance Board

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### GREEN MARINE GOVERNANCE BOARD

Greg WIGHT	Algoma Central Corporation
Steve CANTIN	Bunge of Canada
Michael HAGN	Canfornav
Adam WASSERMAN	Cleveland-Cuyahoga County Port Authority
André LANDRY	Cogema
Gérard LEBLANC	CTMA Group
Adolph OJARD	Duluth Seaway Port Authority
Theodore CHODOS	Empire Stevedoring Company
Laurence G. PATHY	Fednav Limited
Louis-Marie BEAULIEU	Groupe Desgagnés
Bruce WOOD	Hamilton Port Authority
Anthony G. IANELLO	Illinois International Port District
Marc DULUDE	IMTT-Québec
Michel DALLAIRE	Les Élévateurs des Trois-Rivières
Madeleine PAQUIN	Logistec Corporation
Scott BRAVENER	Lower Lakes Towing
Blair MCKEIL	McKeil Marine
Kevin DOHERTY	Montreal Gateway Terminals Partnership
Sylvie VACHON	Montréal Port Authority
Gordon BAIN	Ocean Group
Sid HYNES	Oceanex
Donna TAYLOR	Oshawa Port Authority
Guy LEBLANC	Parc Industriel et Portuaire de Bécancour
Yves-Denis GAGNON	Porlier Express
Eric REINELT	Port of Milwaukee
Ross GAUDREAU	Québec Port Authority
Martial SAVARD	Reformar
Brian RITCHIE	Rigel Shipping Canada
Marie-Louise CHARBONNEAU	Rio Tinto Alcan
Alain BOUCHARD	Saguenay Port Authority
Collister JOHNSON	Saint Lawrence Seaway Development Corporation
Allister PATERSON	Seaway Marine Transport
Pierre GAGNON	Sept-Îles Port Authority
Georges FARRAH	Société des Traversiers du Québec
Michel GADOUA	Société du port de Valleyfield
Richard J. CORFE	St. Lawrence Seaway Management Corporation
Gerry CARTER	The CSL Group
Tim HENEY	Thunder Bay Port Authority
Michael J. STOLARCZYK	Toledo-Lucas County Port Authority
Alan PAUL	Toronto Port Authority
Gaétan BOIVIN	Trois-Rivières Port Authority
Louis FORGET	Ultramar
Pat LODUCA	Upper Lakes Group
David CREE	Windsor Port Authority

# Annex C

## Green Marine Committee Members

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### GREEN MARINE EXECUTIVE COMMITTEE MEMBERS

#### CO-CHAIRS:

Laurence PATHY	Fednav Limited
Gerry CARTER	The CSL Group
Terry JOHNSON	Saint Lawrence Seaway Development Corporation

#### MEMBERS:

Adam WASSERMAN	Cleveland-Cuyahoga County Port Authority
Adolph OJARD	Duluth Seaway Port Authority
Louis-Marie BEAULIEU	Groupe Desgagnés
Bruce WOOD	Hamilton Port Authority
Madeleine PAQUIN	Logistec Corporation
Allister PATERSON	Seaway Marine Transport
Richard CORFE	St. Lawrence Seaway Management Corporation

### ST. LAWRENCE ENVIRONMENT COMMITTEE

#### PRESIDENT:

Lyne MARTIN	Montréal Port Authority
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#### SECRETARY:

David BOLDUC	Green Marine
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#### MEMBERS:

Martin DAIGNEAULT	Bunge of Canada
Pierre DARCY	Canadian Coast Guard
Marie-Josée COUTURE	Environnement Canada
Philippe RODERBOURG	Fednav Limited
Marc GAGNON	Fednav Limited
Marc DESGAGNÉS	Groupe Desgagnés
Anne AUCLAIR	Groupe Desgagnés
Claude MAILLOUX	Human Resources Sectorial Committee of the Maritime Industry
Nicolas PARENT	Innovation Maritime
Ingrid STEFANCIC	Logistec
Guy DESMARAIS	Ministère du Dév. Durable, de l'Env. et des Parcs
Manon D'AUTEUIL	Sept-Îles Port Authority
Anne LEGARS	Shipping Federation of Canada
Caroline GRAVEL	Shipping Federation of Canada
Pierre-Paul DESGAGNÉS	Société des traversiers du Québec
Pierre PESANT	St. Lawrence Seaway Management Corporation
Nicolas AUDET	Stratégies Saint-Laurent
Maria DANILENKO	The CSL Group
Caroline DENIS	The CSL Group
Janin HUARD	Transport Canada
Rachid RAFFA	Transport Québec
Pierre BROCHU	Transport Québec
Claude COMTOIS	University of Montréal

# Annex C

## Green Marine Committee Members (continued) 38

### GREAT LAKES ENVIRONMENT COMMITTEE

#### **PRESIDENT:**

Marilyn BAXTER  
Hamilton Port Authority

#### **SECRETARY:**

Andrew LOSOS  
Canadian Shipowners Association

#### **COORDINATOR:**

David BOLDUC  
Green Marine

#### **MEMBERS:**

Steven FISHER	American Great Lakes Ports Association
Guy JARVIS	Thunder Bay Port Authority
Ray JOHNSTON	Chamber of Maritime Commerce
Pamela DAVIS	Cleveland-Cuyahoga County Port Authority
Pierre PESANT	St. Lawrence Seaway Management Corporation
Sal PISANI	St. Lawrence Seaway Management Corporation
Mike KIRKPATRIC	Federal Marine Terminals
Richard STEWART	Great Lakes Maritime Research Institute
John GRRUSZEWSKI	McKeil Marine
Mira HUBE	Seaway Marine Transport
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