15 YEARS

GREEN MARINE

PERFORMANCE REPORT

2022

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GREEN MARINE BY THE NUMBERS

3 OFFICES

7 EMPLOYEES

15 PERFORMANCE INDICATORS

175 PARTICIPANTS

462 MEMBERS AND COUNTING!

All the statistics and analyses related in this report are based on the results calculated as of May 18, 2023.

CHAIR'S ADDRESS

As someone involved with Green Marine through my company's participation since the program's beginning 15 years ago, it's a pleasure to be in the wheelhouse as chair of the board for a while to get a closer look at how everything works.

I am particularly aware of how this 15th year is a pivotal time for the maritime industry and, frankly, the world. Green Marine is stewarding the North American maritime industry's voluntary efforts to work beyond regulations at a time when the entire transportation sector must undergo transformation to slow climate change. Green Marine's membership has set out to do this with a commitment to advance environmental excellence in everything from waste management to taking the necessary steps to achieve net-zero emissions.

Given the significant efforts that it takes participants to assess their annual environmental performance, have it independently verified, and improve year over year, it's truly heartening that so many of our industry are committed to the long haul of continually reducing their footprint at the same time as new participants are jumping aboard.

It's so great to see the steady increase in shipyards in particular, with this group now sufficient in number to have its own criteria separate from terminal operators.

Having Green Marine extend its reach globally with the Green Marine Europe program gaining membership, and more recently with the Spirit of Tasmania, the first Australian-owned ferry service to become a participant, also bodes well for our future.

As you'll read in this report, the efforts that Green Marine's participants make just to maintain their ranking are impressive. The program is reviewed on a regular basis to ensure it encompasses new regulations and is progressively more demanding beyond that base at each level. The program also continues to incorporate entirely new sets of challenges, such as the new performance indicators on community relations and on aquatic ecosystems that now apply to ports.

No large organization works well on its own and I want to thank all the board members who have kindly given their expertise, time, and energy to pilot this wheelhouse. I especially want to acknowledge the steadfast commitment of Mark Collins of BC Ferries, Interlake's Mark Barker, and now retired Deputy Administrator Craig Middlebrook from the Great Lakes St. Lawrence Seaway Development Corporation, as they end their board service. Thank you for your valuable insights!

Of course, no one gets anywhere without a good crew, and I must thank David Bolduc, Green Marine's president, and his small but mighty team for keeping this program on course and at proper speed to achieve our industry's greater sustainability, and certainly make my role easier.

Michael Fratianni

15.YEARS
of Advancing Environmental Excellence!

A voluntary environmental certification program encouraging maritime enterprises to adopt measurable concrete actions that go beyond regulatory obligations.

AN INCREASINGLY DIVERSIFIED NETWORK

Green Marine's **membership has increased more than five-fold** since the program's inception 15 years ago. Its robust growth can be attributed to a number of factors that include a mounting awareness of the program's success throughout North America, as well as a true welcoming of newcomers. The program guides new participants from where they are – starting with Level 1 monitoring of regulations to the program's higher levels with year-over-year improvements.

A more than seven-fold increase in association members has certainly helped to boost Green Marine's numbers, as these maritime organizations have played a pivotal role in building the program's value and promoting it to their own members. **Green Marine is also proud to be on the threshold of welcoming a 100th supporter** as these members represent the scientific community, government agencies, and environmental organizations and provide valuable insights and expertise in developing the certification requirements.

Many of the answers to current environmental challenges are dependent on the innovations and emerging technologies being developed or already offered by Green Marine's partners. Their diverse products and services assist participants in improving their environmental performance.

15 YEARS OF MEMBERSHIP GROWTH
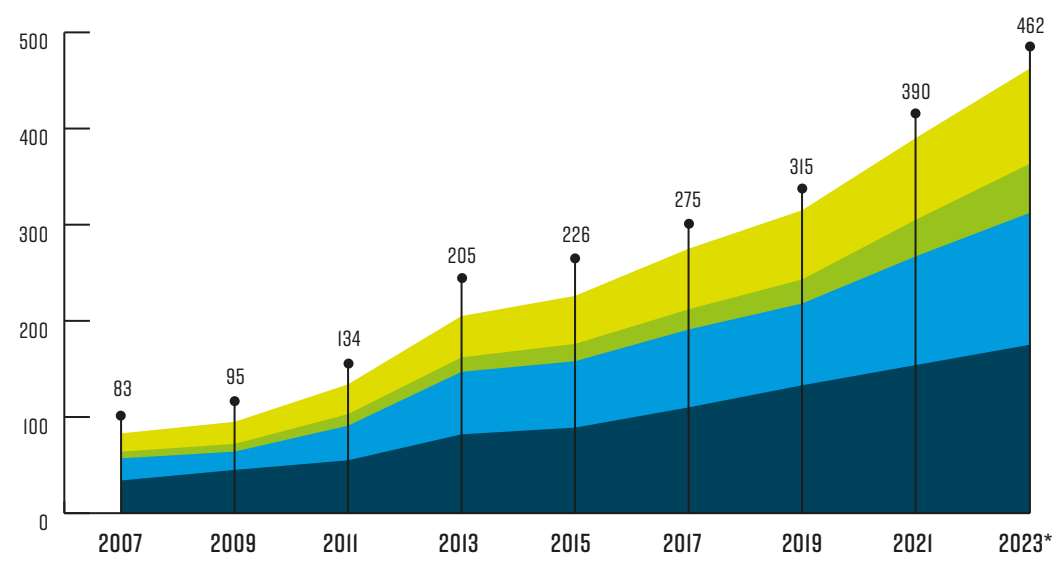
* Membership as of May 18, 2023

● **175** PARTICIPANTS
Ship owners, ports, terminals, shipyards and the Seaway corporations.

● **51** ASSOCIATIONS
Maritime industry advocacy organizations.

● **137** PARTNERS
Suppliers of maritime-related products, services, equipment and new technologies.

● **99** SUPPORTERS
Scientific research institutes, environmental organizations, and governmental agencies.

TIMELINE

GREEN MARINE

2007

- **OCTOBER**
  Green Marine is officially launched in Quebec City!

2008

- **JANUARY**
  The Green Marine Management Corporation is established.
- **FEBRUARY**
  GreenTech 2008 - Green Marine's first annual conference - is held in Montreal.
- **OCTOBER**
  The first self-evaluation guides are released covering six initial performance indicators.

2009

- **MAY**
  Annual results are published for the first time for Green Marine's founding participants.
- **NOVEMBER**
  The inaugural edition of Green Marine Magazine is published.

2010

- **JANUARY**
  Green Marine appoints an Executive Director.
  New indicator: Environmental Leadership (ports).
- **OCTOBER**
  Green Marine opens its membership to all maritime companies operating in Canada and the United States.

2011

- **JANUARY**
  Two new indicators: Prevention of Spills and Leakages, Dry Bulk Handling and Storage.

2012

- **JANUARY**
  New indicator: Garbage Management (ship owners).
- **APRIL**
  Green Marine signs a Memorandum of Cooperation with Transport Canada.

2014

- **NOVEMBER**
  Green Marine hires a West Coast Program Manager, and opens a new office in Seattle, WA.

2015

- **JANUARY**
  New indicator: Waste Management (ports and terminals).

2016

- **FEBRUARY**
  The program's 100th participant is welcomed!
- **NOVEMBER**
  Green Marine hires an East Coast Program Manager, and opens a new office in Halifax, NS.

2017

- **JANUARY**
  New indicator: Underwater Noise (ports and ship owners).

2019

- **NOVEMBER**
  A second staff position in Communications is created.

2020

- **JANUARY**
  The Smart Guide is launched as a pilot project.
- **MARCH**
  New indicator: Ship Recycling (ship owners).
- **APRIL**
  Green Marine Europe is officially launched!

2021

- **JANUARY**
  New indicator: Community Relations.
- **SEPTEMBER**
  A second U.S.-based Program Manager is hired.

2022

- **MAY**
  A new website is launched along with the first 100% digital issue of Green Marine Magazine.
- **OCTOBER**
  The 15th anniversary of the environmental certification program!

2023

- **JANUARY**
  New indicator: Aquatic Ecosystems (ports).
- **JUNE**
  The program marks its 15th year of consecutive annual performance results.
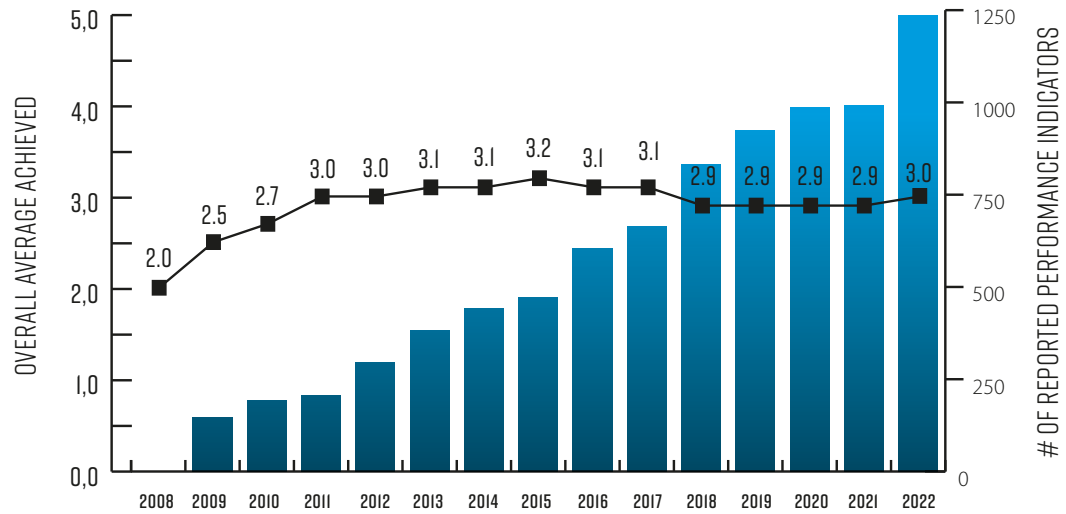
A WELL-BALANCED AND EVER-EVOLVING PROGRAM

Green Marine welcomes the biggest year-over-year increase in the number of self-evaluation reports submitted. The 25 new reports are led by 14 new terminal locations. The decision by participants to include more of their operations speaks to the program's relevance to current environmental, social, and governance (ESG) expectations, along with its clear guidance and direction in benchmarking environmental performance and planning improvements, as well as usefulness in sharing progress with relevant stakeholders.

A total of 183 reports were submitted on the calendar year 2022 environmental performance, representing an 11% increase over the 165 reports for 2021 and maintaining Green Marine's year-over-year average percentage increase.

The overall average by participants was maintained at 3.0 on the program's five-level scale. Green Marine's overall average by participants has remained steady at or nearly 3.0 over the past decade. This consistent average reflects the program's well-balanced while ever-evolving criteria. The program sets out challenging but still achievable goals as new environmental priorities are introduced from time to time, and the criteria for existing performance indicators are augmented to be sufficiently demanding at each level as new regulations are introduced and/or new guidelines and technologies become available.

Participants reported on a **total of 1227 performance indicators** for their 2022 efforts. This included a **net increase of 101 levels** and the first year of mandatory reporting on the newly introduced Community Relations indicator.

PROGRESSIVE GOALS

Green Marine's overall average has further been maintained with a significant influx of new participants who typically required some time to familiarize themselves with all the requirements. The various criteria are designed to challenge new participants after their first year of benchmarking with progressive goals for each of the performance indicators while still offering flexibility in the year-over-year improvements they undertake.

A closer look at where improvements were possible (i.e., excluding first-year participants and the new community relations indicator which was mandatory for the first time) indicates a net improvement of 11%.

For the 2022 results, half of the participants (49%) improved by at least one net level over their previous annual report!

The program's demanding nature is reflected in the fact that less than half of the participants (42%) have achieved a Level 3 or higher overall average rating. One fifth of participants (20%) average at Level 4 or higher.

PARTICIPATION / PERFORMANCE

PERCENTAGE OF PARTICIPANTS WITH AN AVERAGE AT OR ABOVE LEVELS 1, 2, 3, 4 AND 5
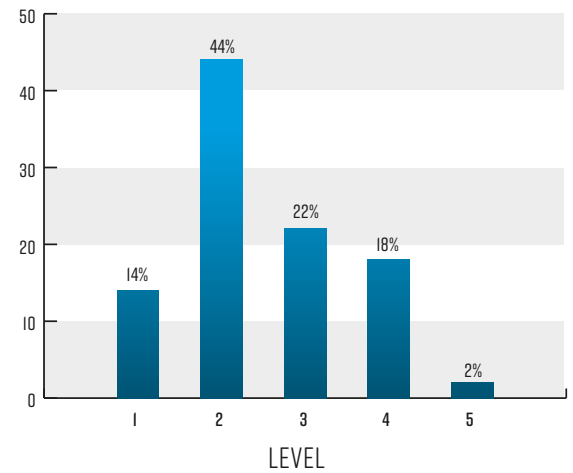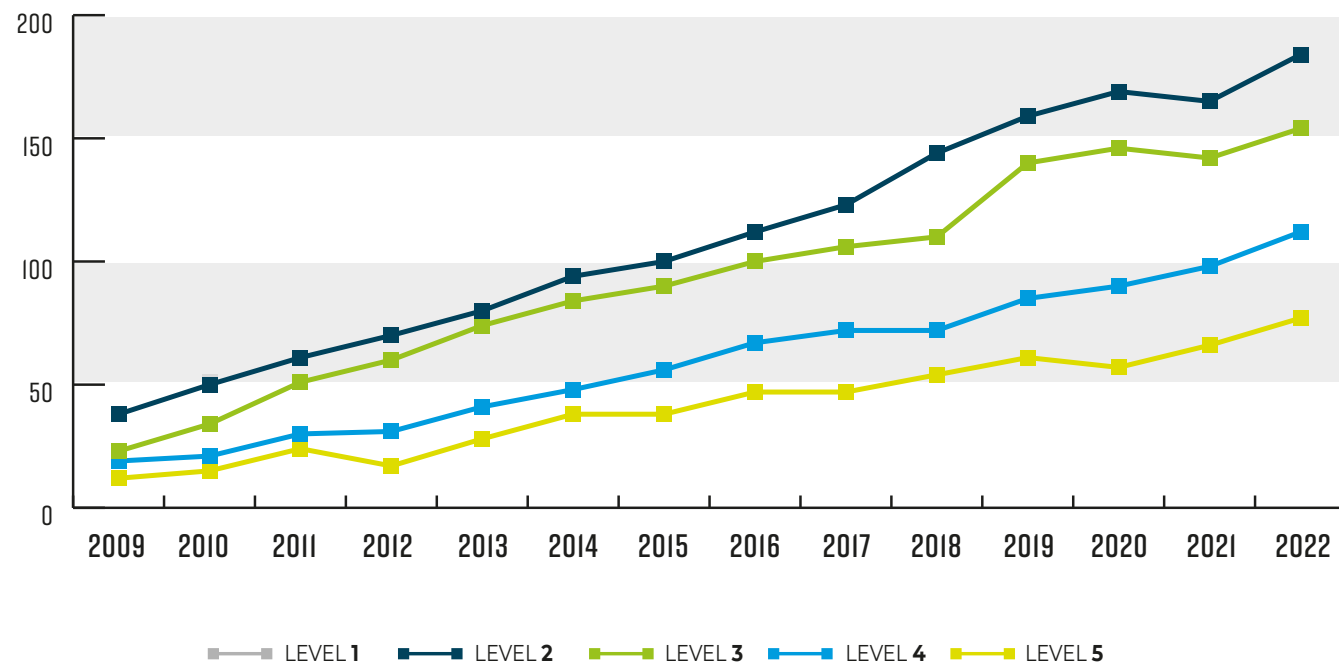
TRUE COMMITMENT TO GREATER PERFORMANCE

Green Marine is celebrating its 15th year of advancing environmental excellence within the maritime industry. Taking into perspective 15 years of reporting, data clearly illustrates the upward trend in continual improvement and growth.

CONTINUAL IMPROVEMENT

LEVEL **1**   LEVEL **2**   LEVEL **3**   LEVEL **4**   LEVEL **5**

15 YEARS OF CONTINUAL IMPROVEMENT

The program's cumulative effect in reducing maritime transportation's environmental footprint has been substantial, with the most progress achieved by long-term participants. This continual improvement over time is evidenced across the board when the performance by each type of participants is viewed over five-year intervals based on when they started in the program.

PERFORMANCE AVERAGE BY PARTICIPANT TYPE IN 5-YEAR COHORTS

SHIP OWNERS

	2018-2022	2013-2017	2008-2012
LEVEL	2,4	3,1	3,4

TERMINALS

	2018-2022	2013-2017	2008-2012
LEVEL	2,5	3,2	3,4

PORTS & SEAWAY

	2018-2022	2013-2017	2008-2012
LEVEL	2,3	3,0	3,4

SHIPYARDS

	2018-2022	2013-2017	2008-2012
LEVEL	2,0	2,6	3,2
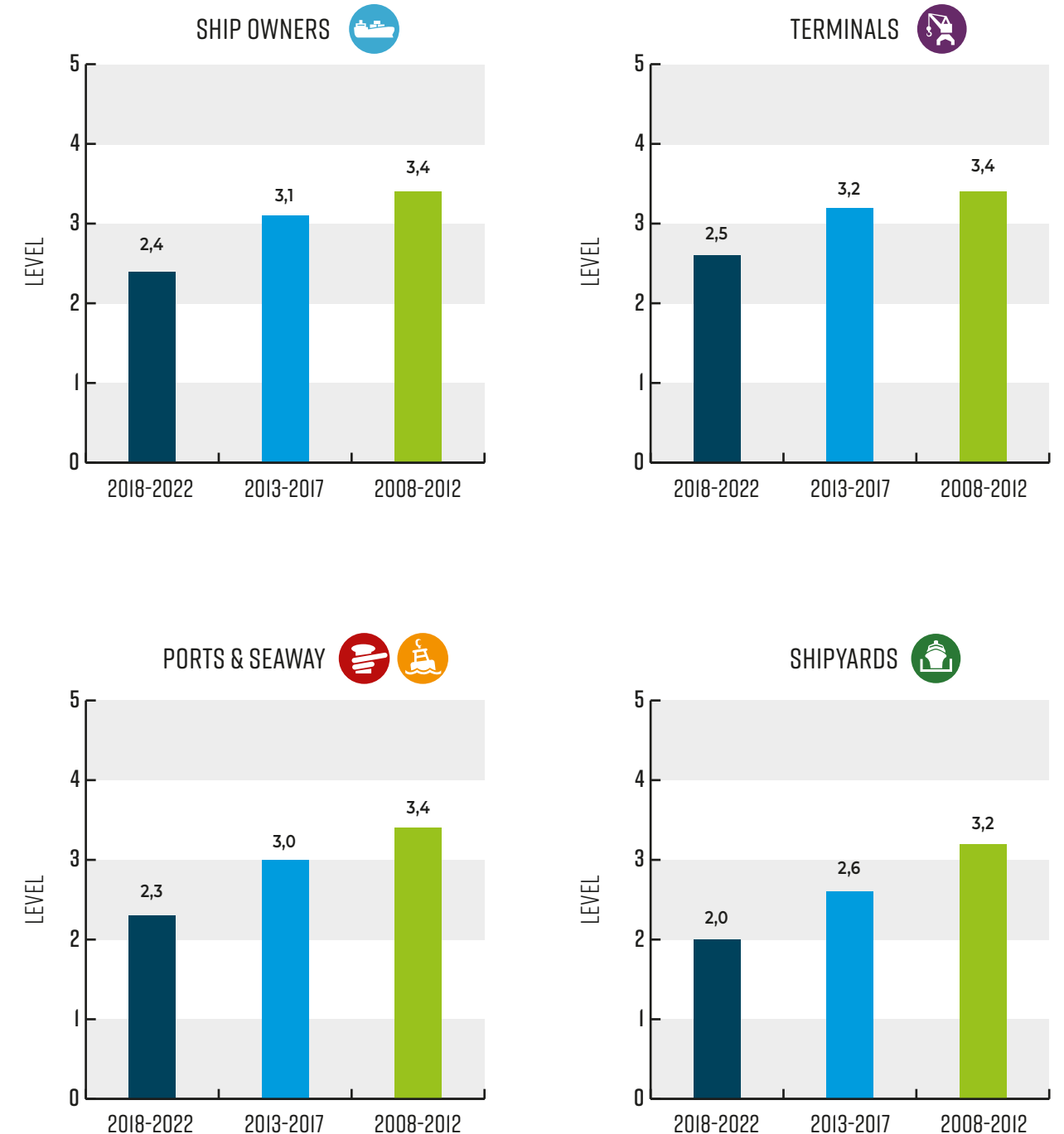
MEMBERSHIP COMPOSITION

The program's structure has been designed and carefully evolved to integrate participants from a diverse range of maritime sectors and geographic locations. The latest is Australia where Green Marine has undertaken a pilot project to assess the program's applicability to the beyond-compliance environmental performance of ferry operators in Down Under waters.

DISTRIBUTION OF ALL PARTICIPANT TYPES

10%
28%
31%
1%
30%
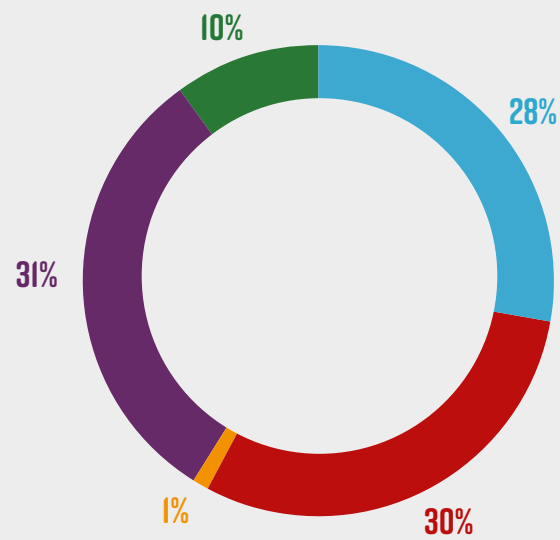
- SHIP OWNERS
- SHIPYARDS
- PORTS
- SEAWAY
- TERMINALS

SHIP OWNERS

Green Marine has 49 ship owners as participants, compared to 42 in 2021. The ship owners represent an overall fleet of 620 vessels operating in a wide range of capacities. The seven new ship owners have boosted the Green Marine fleet with 70 additional vessels, an 11% increase.

Four ship owners stand out for their decarbonization efforts. They either achieved the average cumulative annual GHG intensity reduction of 2.4% to be on track for net-zero emissions by 2050 or are operating a low-carbon emission vessel on a renewable or zero-carbon energy source.

In their second year of obligatory reporting on ship recycling, ship owners improved their overall performance from 1.8 to 2.1.

9 LEVELS HIGHER

8 LEVELS HIGHER

6 LEVELS HIGHER

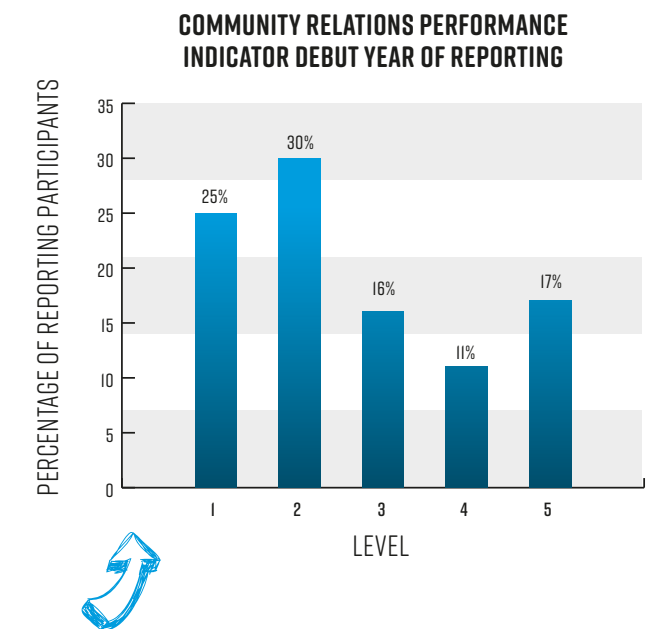**6 LEVELS HIGHER**
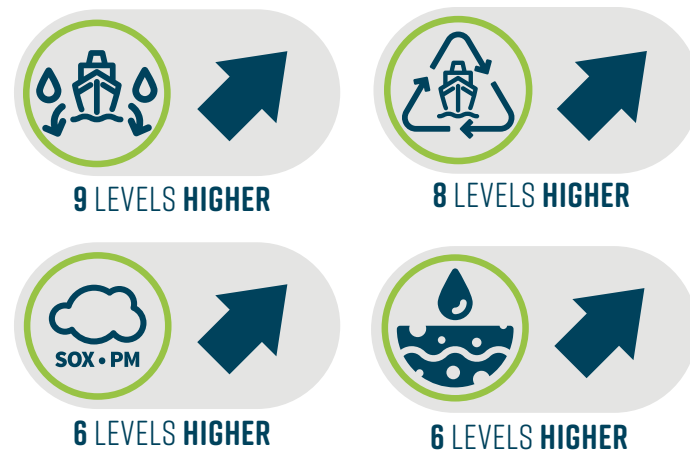
PORTS

SEAWAY

The program currently has 52 ports in the program. Both the Canadian and U.S. Seaway administrations have also been participating since Green Marine began.

The most significant progress by ports has been in the efforts to reduce GHG and air pollutants.

The Canadian and U.S. Seaway administrations maintained their high level of results. Their collaborative approach involves each filing a performance evaluation for independent verification but publishing their combined results, weighted by the number of locks managed, to reflect their allied efforts in advancing environmental excellence.

12 LEVELS HIGHER

7 LEVELS HIGHER

5 LEVELS HIGHER

COMMUNITY RELATIONS PERFORMANCE INDICATOR DEBUT YEAR OF REPORTING

PERCENTAGE OF REPORTING PARTICIPANTS

LEVEL	
1	25%
2	30%
3	16%
4	11%
5	17%

GREAT START FOR COMMUNITY RELATIONS!

The community relations performance indicator made the highest debut for a new performance indicator with an overall average of 2.7. This new indicator sets out to maintain or improve the quality of relations with community stakeholders through open and transparent communications.

Reporting on this indicator's criteria was required by all landside participants for the first time. A total of 17% of landside participants achieved Level 5 for this new indicator. Specifically, 16 ports evaluated their community's perception (criterion 5.1) and carried out a co-creation project in collaboration with local stakeholders (criterion 5.2).
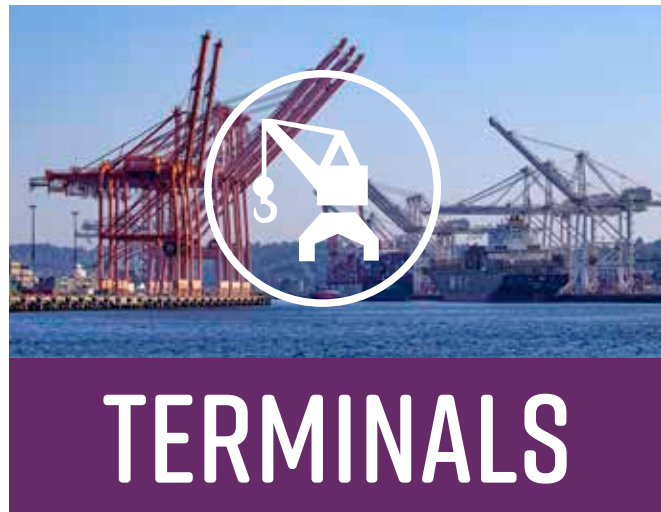
TERMINALS

Terminal operators form the largest group of Green Marine participants and include terminals managed by ferry services. A total of 71 evaluations were submitted for the 2022 environmental performance on behalf of **more than 200 terminal locations in Canada and the United States.** The number of evaluations rose by 18% over 2021, making this the largest increase in submitted reports among the participating membership. The gain reflects in good part the decision by companies to add locations for certification once they have gone through the entire process for an initial terminal.

7 LEVELS HIGHER

**6 LEVELS HIGHER**

5 LEVELS HIGHER

Terminal operators uniquely have the option within Green Marine of reporting as either a corporate entity with the performance of all their locations presented within a single set of results, or on an individual basis with each terminal having its own evaluation. If reporting as a corporate entity, the result from the lowest achieving terminal must be the result reported on behalf of all the terminals for each performance indicator. The individual certification option involves each participating terminal submitting its own results and undergoing the required external verification.

SHIPYARDS

A total of 17 shipyards with operations at 22 locations are currently evaluated within the program.

The steady climb in shipyard membership in recent years made it time for this group to have its own criteria separate from that originally shared with terminal operators. The indicators have been revised to apply specifically to shipyard activities. The biggest change, prompted by the shipyard participants, has been to set the Level 4 reduction targets so they are on track to achieve carbon neutrality by 2050.

4 LEVELS HIGHER
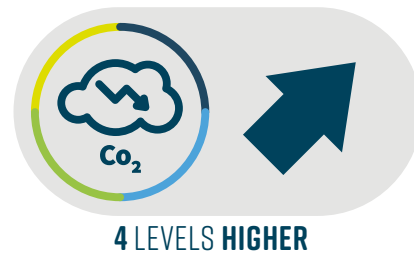
"It will be great to be able to focus specifically on the environmental priorities for shipyards going forward and be recognized for these efforts."

— KEVIN BARTOY
Washington State Ferries

CERTIFICATION PROCESS

1 **ANNUAL SELF-EVALUATION**
Completion of online **Smart Guide** by participants
Due March 15

2 **EXTERNAL VERIFICATION**
Verification every 2 years by an **accredited external verifier**
Due early May

3 **PUBLICATION OF RESULTS**
Annual Performance Report released at **GreenTech**
In June

4 **CONTINUAL IMPROVEMENT**
To **become** certified: achieve at least one Level 2 in the 1st year;

To **maintain** certification: continual improvement of one level each year until all applicable indicators ≥ Level 2

GREEN MARINE • CERTIFIED • CERTIFIED • GREEN MARINE

15 YEARS
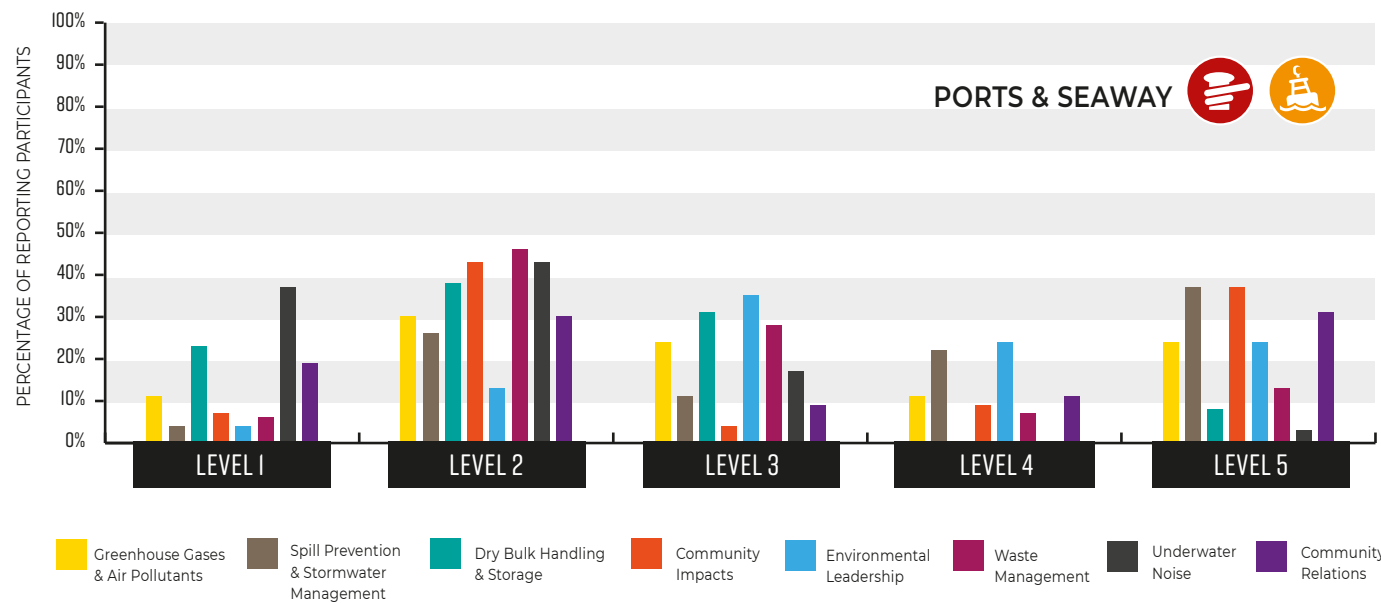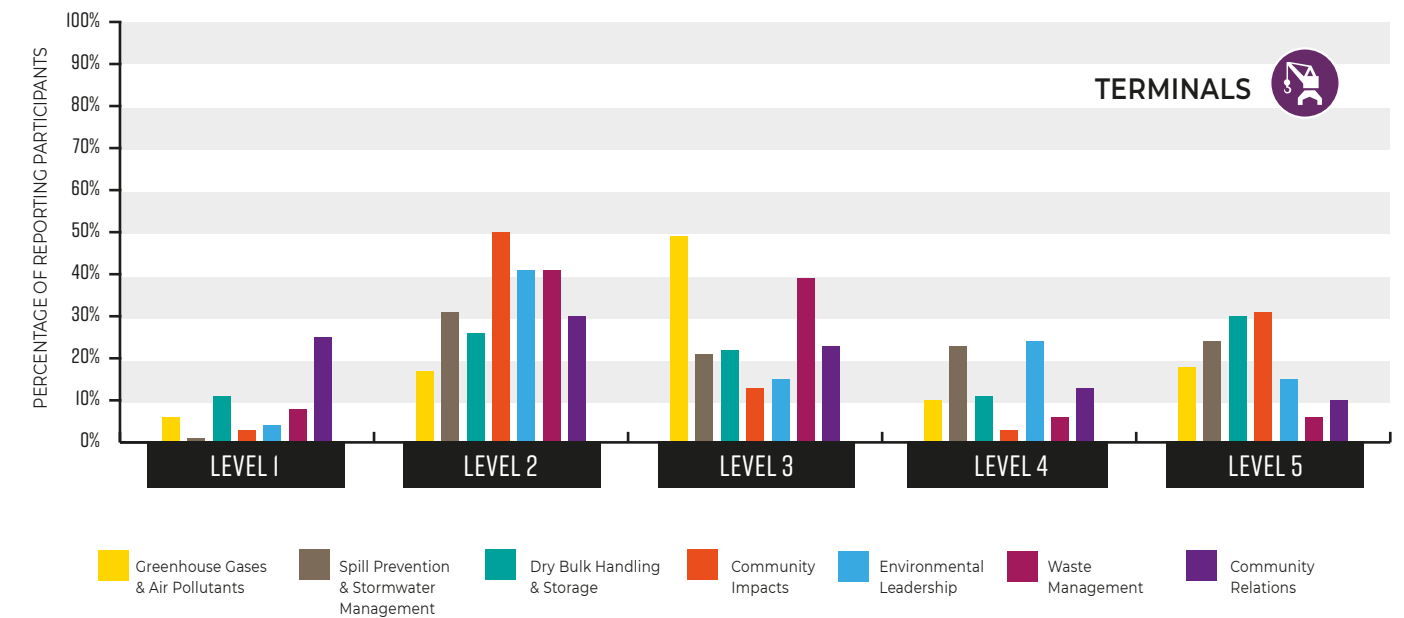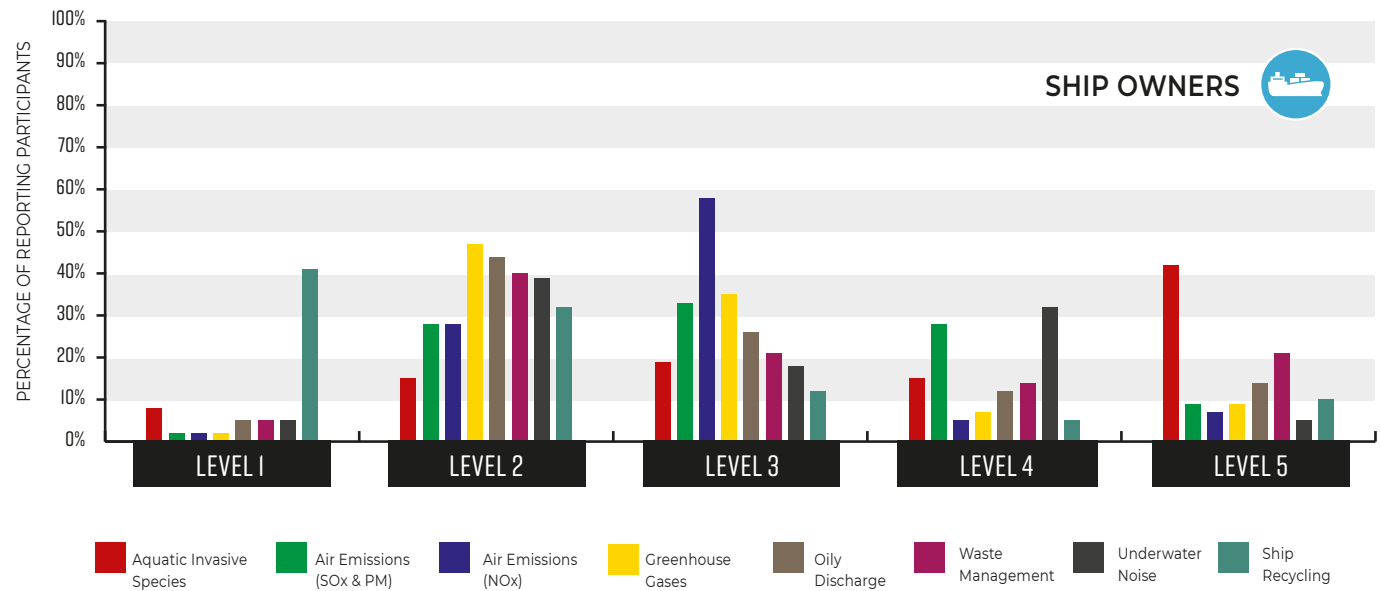
RESULTS BY TYPE OF PARTICIPANT
FOR EACH PERFORMANCE INDICATOR

A voluntary initiative, the Green Marine environmental certification program sets out a clear course of measurable concrete actions for its participants to achieve sustainability beyond regulatory obligations. The environmental priorities are often shared by the overall participating membership, but the criteria are specific to each type of maritime operations.

SHIP OWNERS

PERCENTAGE OF REPORTING PARTICIPANTS

LEVEL 1 · LEVEL 2 · LEVEL 3 · LEVEL 4 · LEVEL 5

Aquatic Invasive Species · Air Emissions (SOx & PM) · Air Emissions (NOx) · Greenhouse Gases · Oily Discharge · Waste Management · Underwater Noise · Ship Recycling

TERMINALS

PERCENTAGE OF REPORTING PARTICIPANTS

LEVEL 1 · LEVEL 2 · LEVEL 3 · LEVEL 4 · LEVEL 5

Greenhouse Gases & Air Pollutants · Spill Prevention & Stormwater Management · Dry Bulk Handling & Storage · Community Impacts · Environmental Leadership · Waste Management · Community Relations

PORTS & SEAWAY

PERCENTAGE OF REPORTING PARTICIPANTS

LEVEL 1 · LEVEL 2 · LEVEL 3 · LEVEL 4 · LEVEL 5

Greenhouse Gases & Air Pollutants · Spill Prevention & Stormwater Management · Dry Bulk Handling & Storage · Community Impacts · Environmental Leadership · Waste Management · Underwater Noise · Community Relations

SHIPYARDS

PERCENTAGE OF REPORTING PARTICIPANTS

LEVEL 1 · LEVEL 2 · LEVEL 3 · LEVEL 4 · LEVEL 5

Greenhouse Gases & Air Pollutants · Spill Prevention & Stormwater Management · Community Impacts · Environmental Leadership · Waste Management · Community Relations

All the graphs shown in this report are based on the results as of May 18, 2023.

15 YEARS

GREEN MARINE OUT AND ABOUT

While Green Marine will continue to make use of online meeting platforms when it best suits all, the entire team is delighted to return to the field post-pandemic to be able to meet others in person again to support participants, discuss the program's development, and talk with potential new members. Here are some pictures of the team's whereabouts in the past year!
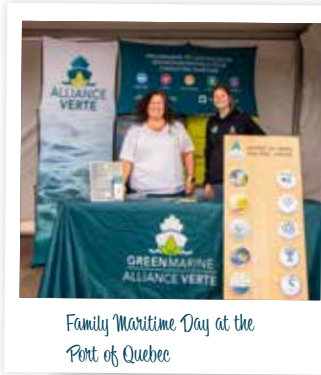
JUNE 2022
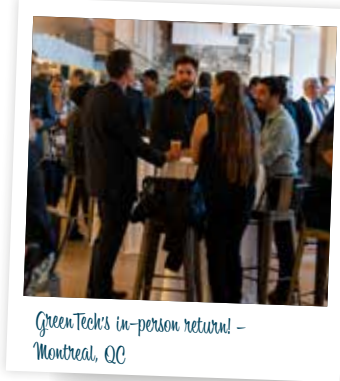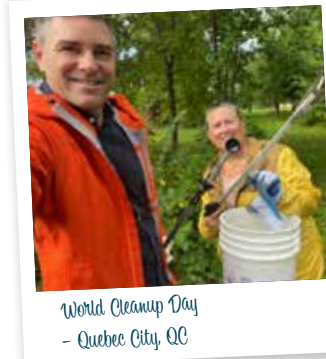

GreenTech's in-person return! – Montreal, QC

AAPA Annual Convention – Toronto, ON

SEPTEMBER 2022

Family Maritime Day at the Port of Quebec

World Cleanup Day – Quebec City, QC

OCTOBER 2022

Interferry Conference – Tacoma, WA (with Green Marine Europe)

Strategic planning meeting (the whole gang together at last!)

AAPA Annual Convention – Orlando, FL

JANUARY 2023

AAPA Powers Summit – Tampa, FL

FEBRUARY 2023
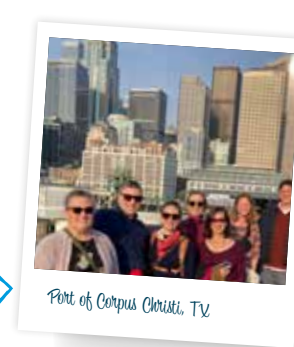
Port of Corpus Christi, TX

IMPAC5 – Vancouver, BC

MARCH 2022

Arctic Frontiers – Aberdeen, Scotland

CEGRIM – Quebec City, QC

APRIL 2022

Shipyards working group, Green Marine Europe – La Ciotat, France
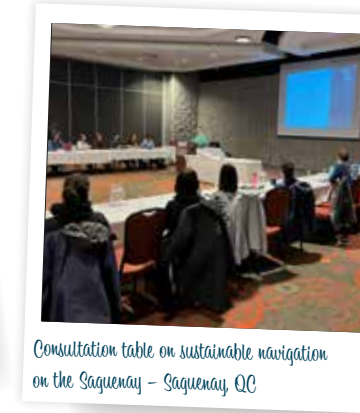
Consultation table on sustainable navigation on the Saguenay – Saguenay, QC

MAY 2022

AWO Spring Convention and Barge-In – Washington, DC

WISTA USA AGM and annual conference – Washington, DC

Quebec sessions on the maritime sector – Quebec City, QC
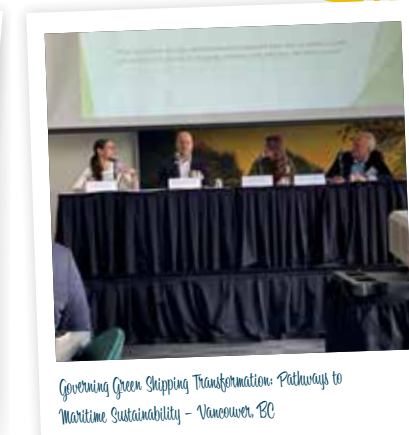
Governing Green Shipping Transformation: Pathways to Maritime Sustainability – Vancouver, BC

15 YEARS

THE PARTICIPANTS

- 🚢 **Ship owners**
- 🔴 **Ports**
- 🟣 **Terminals**
- 🟢 **Shipyards**
- 🟠 **Seaway**

CLOSER REPORTING OVERSIGHT

Following a gap analysis of the verification process conducted by a consultant and discussions with Green Marine's advisory committees in 2022, it was concluded that more robust policies regarding a code of conduct, a dispute resolution process, and a multi-site verification process should be developed. Green Marine subsequently contracted an internationally recognized firm to review and update these policies and procedures.

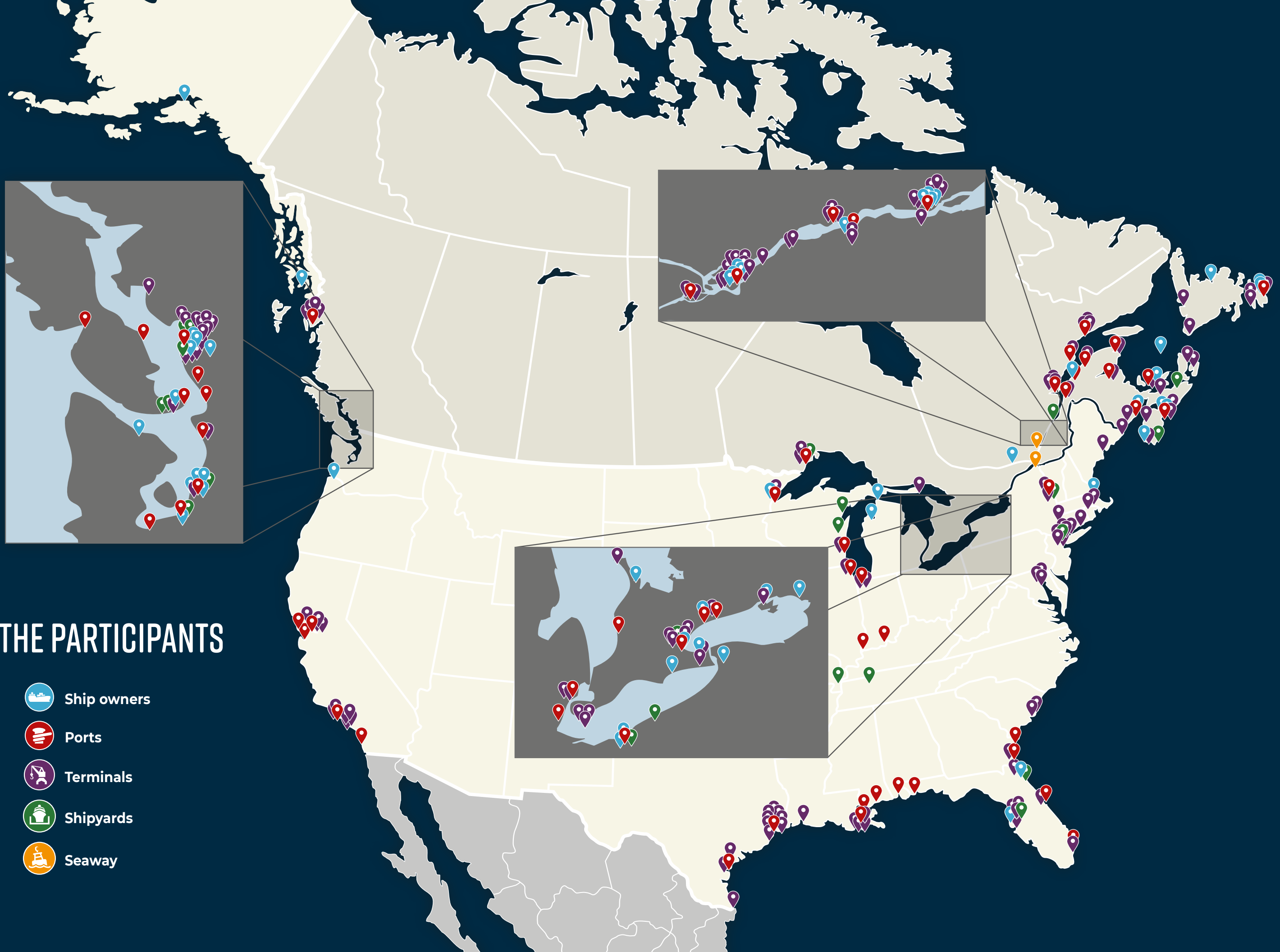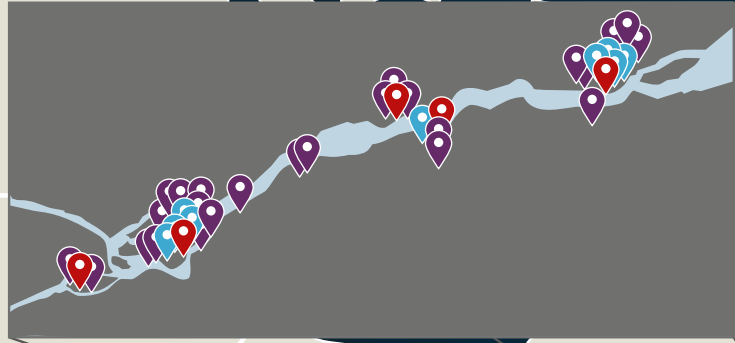The firm assisted Green Marine in developing the **Multi-Site Verification Policy** after reviewing such existing policies from various comparable industry certification schemes. The new policy sets out the process and requirements for participants reporting on multiple sites together.

It first addresses how individual sites are to be reported and then grouped together for each annual self-evaluation. For the verification required every second year, the policy specifies the requirements for the number of site visits and provides guidelines for reviewing documentation.

The policy's aim is to ensure that the verification of participants with multi-site reports is adequately rigorous across all the grouped sites, while still making the verification process both practical in terms of time and feasible in terms of cost.

Individual reporting:

- Participants with multiple locations may opt to report each location's scores individually, but each location must be independently verified.

Grouped sites:

- Reporting: Participants must complete individual self-evaluations for each location within the group.

- Site visits: Participants will be required to increase the number of site visits per verification year based on the total number of locations within the group.

While the new procedures will increase the verification costs for some participants, the applicable membership's consensus deemed this as a fair response to the greater need for more robust verification requirements.

The new policies and the updated verifier accreditation and training process are expected to be in place for the verifications planned for 2024. The Smart Guide online reporting tool is currently being redesigned to facilitate the better aggregation and automation of reporting on multi-site terminals.

Green Marine Senior program manager, Eleanor Kirtley, shadowed NWSA's external verification conducted by verifier Randy Helland. Source: NWSA.

2022 RESULTS

LEVELS SCALE

The results share each participant's environmental performance in 2022 within each applicable performance indicator on the program's 1-to-5 scale.

LEVEL ❶	LEVEL ❷	LEVEL ❸	LEVEL ❹	LEVEL ❺
MONITORING OF REGULATIONS	BEST PRACTICES	INTEGRATED MANAGEMENT AND QUANTIFIED IMPACTS	NEW TECHNOLOGIES AND REDUCTION TARGETS	EXCELLENCE AND LEADERSHIP

INTERPRETATION NOTES

The term n.a. (not applicable) appears several times in the report's tables because the issues addressed by the program do not necessarily apply to all participants. For example, a container terminal doesn't handle dry bulk commodities. An n.a. denotation could also refer to a situation in which a participant does not have full control over the operations on its premises. For example, a port cannot apply the Green Marine criteria where a terminal operator is in charge of facilities. Many port authorities oversee the leasing of port property and do not themselves operate terminals.

The published results indicate each participant's self-evaluated and subsequently verified performance for each of the Green Marine program's applicable indicators. While the program's self-evaluation is comprehensive, it is not an exhaustive assessment of all environmental matters related to a participant's maritime operations. Green Marine has not itself evaluated the environmental performance of the participating enterprises.
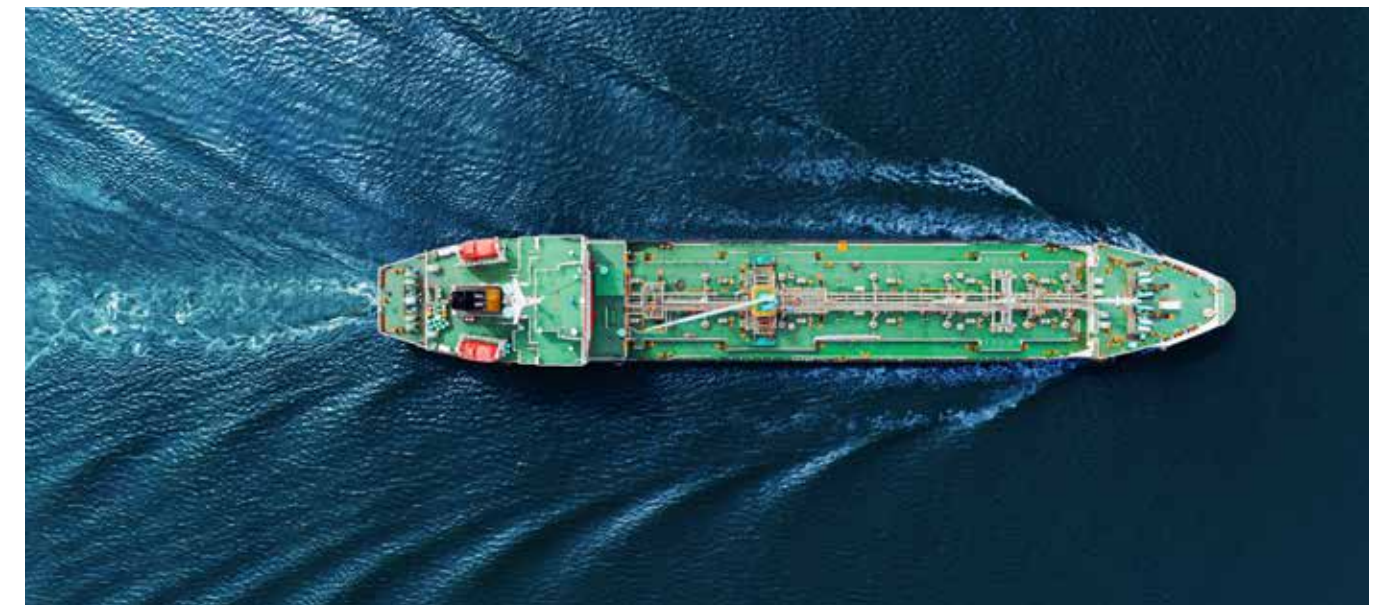
SHIP OWNERS

Ship Owners	Aquatic Invasive Species	Air Emissions (SOx & PM)	Air Emissions (NOx)	Greenhouse Gases	Oily Discharge	Waste Management	Underwater Noise	Ship Recycling
Alaska Marine Highway System	3	2	2	2	2	3	3	1
Algoma Central Corporation	5	4	3	4	5	4	5	4
Atlantic Towing Limited	3	4	3	3	3	4	4	2
Bay Ferries Limited	n.a.	2	2	2	2	2	2	n.a.
British Columbia Ferry Services Inc.	n.a.	3	3	2	2	2	4	2
Canada Steamship Lines	5	4	4	5	5	5	4	4
Canfornav Limited	5	3	3	3	4	5	2	2
Coastal Shipping	5	2	2	3	2	2	3	3
Croisières AML	n.a.	3	3	2	4	4	3	2
CSL International	5	4	3	4	5	5	4	3
CTMA Group	2	3	3	2	2	3	3	1
Federal Fleet Services	5	2	3	3	2	5	4	5
Fednav Limited	5	4	3	5	5	5	4	5
FRS Clipper	1	2	2	2	2	1	1	1
Great Lakes Towing Company	n.a.	2	2	2	3	2	n.a.	1
Groupe Desgagnés	5	5	5	5	4	5	5	5
Ocean Group - Ocean Towing and Marine Transportation	n.a.	4	3	2	2	3	2	1
Ocean Group - Marine works and dredging	1	2	2	2	1	1	1	1
Horizon Maritime	4	4	3	3	4	3	2	3
Interlake Steamship Company	4	3	3	3	2	2	n.a.	1
Laurentian Pilotage Authority	n.a.	4	3	2	3	5	4	2
Lower Lakes Towing Ltd	3	4	3	2	2	2	2	2
Marine Atlantic Inc.	n.a.	3	3	5	4	4	3	3
Marine Towing of Tampa	2	2	2	2	2	2	2	2
McAsphalt Marine Transportation Ltd.	5	5	3	3	3	3	2	1
McKeil Marine Limited	5	3	3	2	2	2	2	1
NEAS	4	3	3	3	3	3	4	1
North Arm Transportation Ltd.	n.a.	3	3	3	3	3	2	1
Northumberland Ferries Limited	n.a.	2	2	2	2	2	2	n.a.
Oceanex	4	4	4	3	5	5	4	2
Ontario Ministry of Transportation	n.a.	2	2	2	1	2	n.a.	2
Owen Sound Transportation Company	n.a.	2	2	2	2	2	n.a.	2
Picton Terminals (tugboats)	2	2	2	2	2	2	2	1
Puget Sound Pilots	n.a.	3	2	2	2	2	2	1
Reformar	3	3	3	3	3	3	2	2
Saam Towage Canada Inc.	n.a.	4	3	2	3	2	4	1
Seaspan Marine Transportation	n.a.	5	5	4	3	4	4	1
Shaver Transportation Company	2	1	1	1	2	2	n.a.	1
Siem Offshore Canada LP	3	3	3	3	2	4	2	2
Société des traversiers du Québec	n.a.	3	3	2	3	2	2	2
Viking Expeditions	5	5	5	3	5	5	3	5
Washington State Ferries	n.a.	4	3	3	2	3	3	2

n.a.: non applicable

Ship owners participating in the Green Marine environmental certification program operate in a wide range of functions, from tugs and service harbour craft to passenger vessels, bulk carriers to container lines, and cruise ships to general cargo carriers.

PORTS

PORTS	GHG & AIR POLLUTANTS	SPILL PREVENTION & STORMWATER MANAGEMENT	DRY BULK HANDLING & STORAGE	COMMUNITY IMPACTS	ENVIRONMENTAL LEADERSHIP	WASTE MANAGEMENT	UNDERWATER NOISE	COMMUNITY RELATIONS
Alabama State Port Authority	4	2	2	2	3	3	n.a.	2
Bécancour Waterfront Industrial Park	3	2	n.a.	2	3	2	n.a.	1
Belledune Port Authority	2	3	n.a.	1	3	2	2	1
Canaveral Port Authority	3	5	n.a.	2	3	2	2	1
Duluth Seaway Port Authority	3	5	NA	5	4	3	n.a.	4
Greater Victoria Harbour Authority	5	5	n.a.	5	5	3	2	5
Halifax Port Authority	5	5	n.a.	4	5	5	2	5
Hamilton-Oshawa Port Authority	4	4	n.a.	5	4	4	n.a.	5
Illinois International Port District	1	2	n.a.	2	2	2	n.a.	1
Montréal Port Authority	5	5	n.a.	5	5	5	n.a.	5
Nanaimo Port Authority	3	2	n.a.	5	4	3	2	3
Northwest Seaport Alliance	5	4	n.a.	2	4	3	3	3
Port Alberni Port Authority	2	2	n.a.	2	3	3	1	2
Port Everglades	5	5	n.a.	5	5	3	3	3
Port Milwaukee	3	2	n.a.	2	3	2	n.a.	2
Port of Albany	3	2	n.a.	5	4	2	n.a.	5
Port of Anacortes	3	3	2	2	3	2	1	1
Port of Bellingham*	1	5	1	2	3	3	2	4
Port of Cleveland	3	5	n.a.	2	4	2	n.a.	1
Port of Corpus Christi	5	5	5	5	5	5	n.a.	5
Port of Everett	1	5	n.a.	2	3	2	2	1
Port of Galveston	3	4	n.a.	3	4	3	2	5
Port of Goderich	2	4	n.a.	2	3	1	n.a.	2
Port of Gulfport (Mississipi State Port Authority)	2	4	2	2	3	2	1	2
Port of Hueneme	5	5	n.a.	5	5	5	3	5
Port of Monroe	2	2	2	2	2	2	n.a.	2
Port of New Orleans	3	5	n.a.	5	5	3	n.a.	5
Port of Oakland	4	4	n.a.	2	3	2	1	4
Port of Olympia	1	4	3	2	2	2	1	2
Port of Pensacola	1	4	1	2	2	1	1	2
Port of Redwood City	2	2	1	1	1	2	1	1
Port of San Diego	5	5	n.a.	5	5	4	2	5
Port of Seattle	5	5	n.a.	5	5	5	3	5
Port of Stockton	4	5	3	5	4	2	n.a.	4
Port of Valleyfield	2	2	n.a.	2	3	2	n.a.	2
Port Saint John	2	3	n.a.	2	4	3	1	5
Ports of Indiana - Burns Harbor	2	4	n.a.	4	3	2	n.a.	2
Ports of Indiana - Jeffersonville	2	3	n.a.	2	2	2	n.a.	2
Ports of Indiana - Mount Vernon	2	3	n.a.	2	2	2	n.a.	2
PortsToronto	2	2	2	2	4	2	n.a.	3
Prince Rupert Port Authority	5	4	n.a.	5	5	4	3	5
Québec Port Authority	5	5	n.a.	5	5	5	n.a.	5
Saguenay Port Authority	3	4	n.a.	5	3	3	2	2
Sept-Îles Port Authority	3	3	3	4	4	3	2	2
Société portuaire du Bas-Saint-Laurent et de la Gaspésie	2	1	n.a.	1	2	2	1	2
St. John's Port Authority, NL	2	2	n.a.	4	3	2	2	3

n.a.: non applicable   * New participant whose results have not yet been verified.

PORTS

PORTS	GHG & AIR POLLUTANTS	SPILL PREVENTION & STORMWATER MANAGEMENT	DRY BULK HANDLING & STORAGE	COMMUNITY IMPACTS	ENVIRONMENTAL LEADERSHIP	WASTE MANAGEMENT	UNDERWATER NOISE	COMMUNITY RELATIONS
Summerside Port Corporation	2	2	n.a.	3	3	3	2	2
Thunder Bay Port Authority	3	2	n.a.	2	3	2	n.a.	1
Trois-Rivières Port Authority	4	5	n.a.	4	4	2	n.a.	4
Vancouver Fraser Port Authority	5	5	n.a.	5	5	3	5	5
Windsor Port Authority	2	4	n.a.	5	4	2	n.a.	3

n.a.: non applicable

SEAWAY

SEAWAY	GHG & AIR POLLUTANTS	SPILL PREVENTION & STORMWATER MANAGEMENT	COMMUNITY IMPACTS	ENVIRONMENTAL LEADERSHIP	WASTE MANAGEMENT	COMMUNITY RELATIONS
Great Lakes St. Lawrence Seaway Development Corporation / Saint Lawrence Seaway Management Corporation †	4.1	5.0	5.0	4.9	4.1	4.9

† Each Seaway corporation filed an individual evaluation to Green Marine and had its results separately verified, but they both opted to publish their results jointly to reflect their allied efforts in achieving environmental excellence. The published results are the weighted average of the individual results based on the number of locks managed by each Seaway corporation.
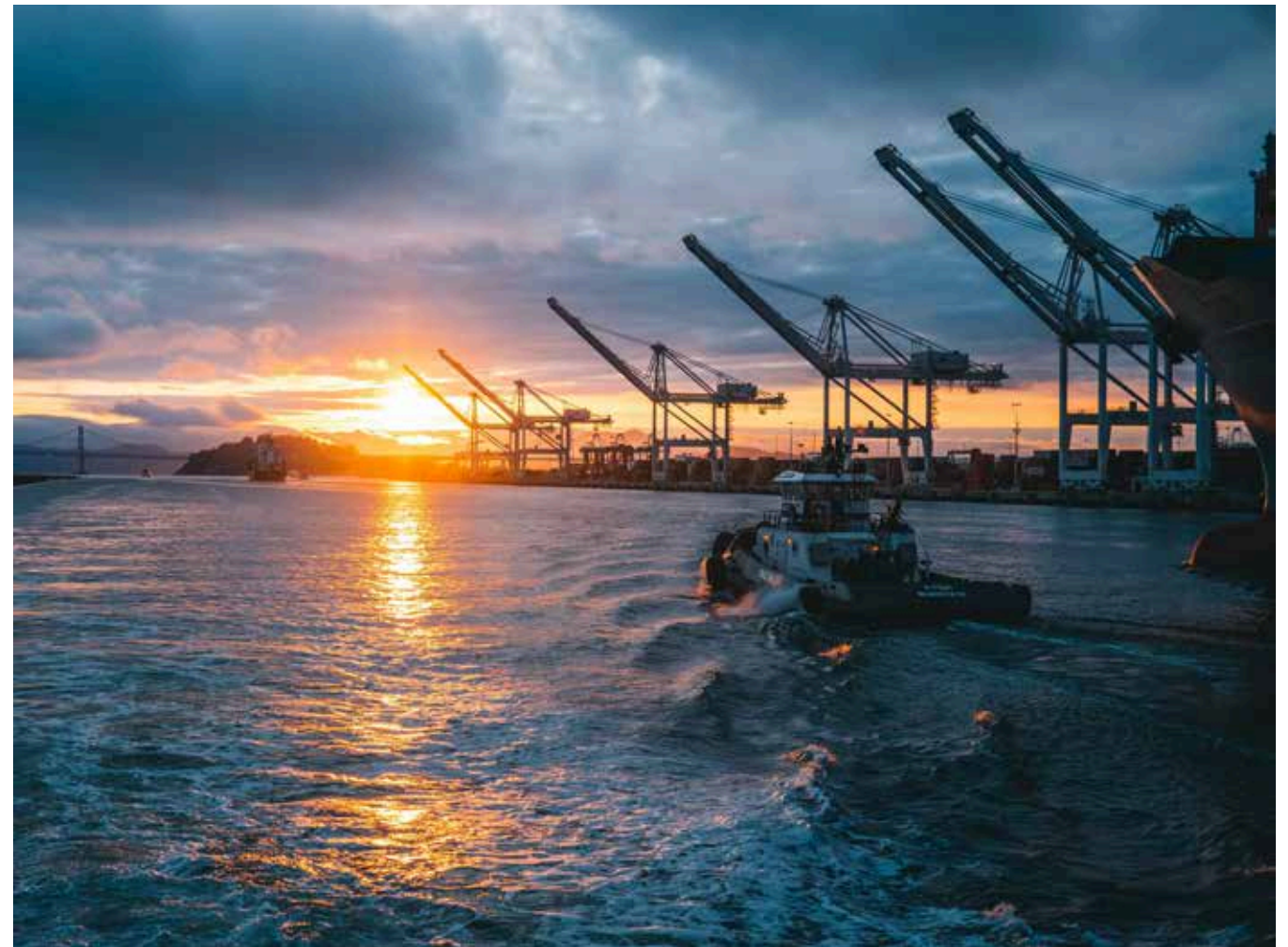
TERMINALS	GHG & AIR POLLUTANTS	SPILL PREVENTION & STORMWATER MANAGEMENT	DRY BULK HANDLING & STORAGE	COMMUNITY IMPACTS	ENVIRONMENTAL LEADERSHIP	WASTE MANAGEMENT	COMMUNITY RELATIONS
ABC Recycling Ltd. (Nanaimo)	2	2	n.a.	2	2	2	1
AltaGas	5	5	n.a.	5	5	3	5
Bay Ferries Limited	2	2	n.a.	2	3	2	2
British Columbia Ferry Services Inc.	3	2	n.a.	2	4	3	3
Ceres Terminals Inc. (Baltimore MD, Bayonne NJ, Benicia CA, Brunswick GA, Charleston SC, Duluth MN, Galveston TX, Houston TX, Jacksonville FL, Miami FL, New Orleans LA, Port Canaveral FL, Port Hueneme CA, Stockton CA, Tampa FL, and Vancouver BC)	4	4	4	2	4	3	4
DP World Prince Rupert Inc.	3	4	n.a.	4	2	2	1
Federal Marine Terminals Inc. (Burns Harbor, Hamilton, Milwaukee, Thorold, Albany, Eastport, Port Mamatee, Tampa, Lake Charles)	3	2	3	2	2	2	2
G3 Canada Limited (Hamilton)	5	5	5	5	5	2	3
G3 Canada Limited (Québec)	3	2	2	2	3	1	2
G3 Canada Limited (Thunder Bay)	4	4	5	5	5	5	2
G3 Canada Limited (Trois-Rivières)	3	3	4	2	4	3	3
G3 Terminal Vancouver	5	5	5	5	5	5	4
GCT Global Container Terminals Inc. (GCT Bayonne, GCT Deltaport, GCT New York, GCT Vanterm)	5	5	n.a.	5	5	4	5
Glencore (Québec)	4	5	5	5	5	4	4
Groupe Somavrac - Fonbrai (Saguenay)	2	2	n.a.	2	2	2	2
Groupe Somavrac - Porlier Express (Sept-Îles)	3	3	n.a.	3	3	3	2
Groupe Somavrac - Servitank Inc. (Bécancour)	3	4	n.a.	2	3	2	2
Groupe Somavrac - Servitank Inc. (Trois-Rivières)*	2	2	n.a.	2	2	2	2
Gulf Stream Marine, Inc. (Corpus Christi, Manchester, Care, Freeport, Brownsville)	3	3	n.a.	3	3	3	3
Kildair Service ULC	3	5	n.a.	2	4	3	1
Logistec Corporation Canada (Contrecoeur, Corner Brook, Halifax, Montreal, Port Colborne, Rideau Bulk, Sept-Îles, Thunder Bay, Trois-Rivières)	3	3	3	3	3	3	3
Logistec Corporation USA (Balterm, Brunswick, Crossglobe, Port Manatee)	3	3	3	3	3	3	3
Marine Atlantic Inc.	5	4	n.a.	3	4	3	3
Metro Ports - Galveston	2	2	1	2	1	1	2
MetroPorts - Anacortes	1	2	2	1	1	1	1
MetroPorts - Burns Harbor	3	2	1	2	2	2	1
Montreal Gateway Terminals Partnership	4	4	n.a.	5	4	3	3
Neptune Bulk Terminals (Canada) Ltd.	5	5	5	5	5	5	4
New Orleans Terminal LLC	5	5	n.a.	5	4	4	4
Norcan Petroleum Group Inc.	3	3	n.a.	3	3	3	2
Northumberland Ferries Limited	2	2	n.a.	2	3	2	2
Oceanex (St. John's)	2	3	n.a.	2	2	3	3
Owen Sound Transportation Company	2	2	n.a.	2	2	2	1
Pacific Coast Terminals Co. Ltd.	3	5	5	5	4	3	2
Pembina Infrastructure and Logistics LP	3	4	n.a.	5	2	2	4
Picton Terminals	2	2	2	2	2	2	1

n.a.: non applicable

TERMINALS	GHG & AIR POLLUTANTS	SPILL PREVENTION & STORMWATER MANAGEMENT	DRY BULK HANDLING & STORAGE	COMMUNITY IMPACTS	ENVIRONMENTAL LEADERSHIP	WASTE MANAGEMENT	COMMUNITY RELATIONS
Ports America Group (Baltimore)	2	4	n.a.	2	2	2	4
Ports America Group (New Orleans)	3	4	n.a.	2	2	2	2
Ports America Group (Hueneme)	3	3	n.a.	2	2	2	2
Ports America Group (MCT)	3	1	n.a.	2	2	2	1
Ports America Group (PNAT)	3	2	n.a.	2	2	2	1
Ports America Group (PNCT)	3	4	n.a.	2	2	2	4
Ports America Group (WBCT)	3	3	n.a.	2	2	3	2
PSA Halifax	5	4	n.a.	5	5	3	3
QSL - Integrated Logistics (Argentia)	3	3	2	2	2	2	3
QSL America (NASCO, Empire Stevedoring New Orleans, Houston)	3	3	3	4	3	3	3
QSL Canada Inc. (Anse au foulon, Baie-Comeau, Beauport, Bécancour, Belledune, Côte Ste-Catherine, Gaspé, Grande-Anse, Gros-Cacouna, Halifax, Hamilton, Matane, Montreal - Bickerdike Terminal, Oshawa, Sheet Harbour, Sept-Îles, Sorel-Tracy, Trois-Rivières)	5	3	4	3	4	3	5
Rio Tinto (Port-Alfred)	5	5	5	5	5	3	5
Southern Fleet & Logistics Group	1	2	n.a.	1	1	1	1
SSA Marine (Long Beach)	1	2	n.a.	2	2	1	1
SSA Marine (West Sacramento)	1	2	1	2	2	1	1
Sterling Fuels Limited (Windsor Terminal)	3	5	n.a.	3	4	3	2
Termont Montréal Inc. (Viau, Maisonneuve)	5	2	n.a.	2	4	2	1
Tidal Coast Terminals Ltd.	3	2	2	n.a.	2	3	1
Trans Mountain (Westridge terminal)	3	4	n.a.	3	4	3	4
TraPac (Los Angeles)	5	5	n.a.	5	2	3	2
Trigon	5	5	5	5	5	5	5
Tymac Launch Service Ltd.	3	2	n.a.	2	2	2	1
Valero Energy (Gaspé)	3	3	n.a.	2	2	2	2
Valero Energy (Jean-Gaulin Refinery)	4	4	n.a.	5	5	3	5
Valero Energy (Montreal-East Terminal)	3	4	n.a.	5	4	3	3
Valleytank	3	5	n.a.	2	2	2	2
Valport Maritime Services Inc.	3	2	2	2	2	2	2
Washington State Ferries	3	3	n.a.	2	4	3	5
Waterfront Petroleum Terminal Company	2	3	3	2	3	2	2
Waterson Terminal Services LLC	3	4	3	2	2	2	1
West Coast Reduction Ltd.	4	5	n.a.	5	4	3	3
Western Stevedoring - Lynnterm	3	5	n.a.	5	4	3	3
Western Stevedoring - Squamish Terminals	4	4	n.a.	5	4	4	3
Westshore Terminals	3	2	2	5	2	2	1
Yellowline Asphalt Products Ltd.	2	5	n.a.	5	2	2	1

n.a.: non applicable   * New participant whose results have not yet been verified.

SHIPYARDS	GHG & AIR POLLUTANTS	SPILL PREVENTION & STORMWATER MANAGEMENT	COMMUNITY IMPACTS	ENVIRONMENTAL LEADERSHIP	WASTE MANAGEMENT	COMMUNITY RELATIONS
Arcosa - Ashland City	1	2	1	1	1	1
Arcosa - Caruthersville	1	2	1	1	1	1
Bayonne Dry Dock & Repair	2	2	2	2	2	2
British Columbia Ferry Services Inc.	3	3	3	4	3	3
Fincantieri ACE Marine	2	2	2	2	2	2
Fincantieri Marinette Marine	2	2	2	2	2	2
Great Lakes Shipyard	2	2	2	2	2	2
Ocean Group - Ocean Industries Inc.	3	2	2	3	2	2
Heddle Shipyards	2	2	2	2	2	1
Hendry Marine Industries (Gulf Marine Repair)	2	2	1	1	1	1
Motive Power Marine	2	3	2	2	3	1
Point Hope Maritime Ltd.	2	5	2	3	3	1
RJ MacIsaac Construction	3	3	4	2	3	2
Seaspan Shipyards	4	4	4	4	5	3
Shelburne Ship Repair	3	2	2	2	2	1
Washington State Ferries	3	3	2	4	3	4

A COLLABORATIVE APPROACH

PROGRAM DEVELOPMENT & REVISION

The criteria are developed based on the collaborative approach at the heart of Green Marine.

WORKING GROUPS

Ad-hoc to review specific issues or develop program indicators; involve subject matter experts from the overall membership.

TECHNICAL COMMITTEES

Participants review and recommend annual updates to performance indicators.
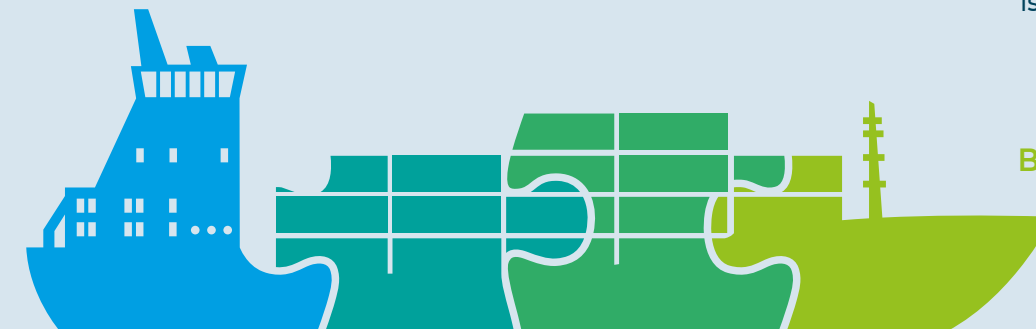
ADVISORY COMMITTEES

Direct program revision and development priorities. Include all four member categories: participant, supporter, partner, and association. A verifier seat is also provided.

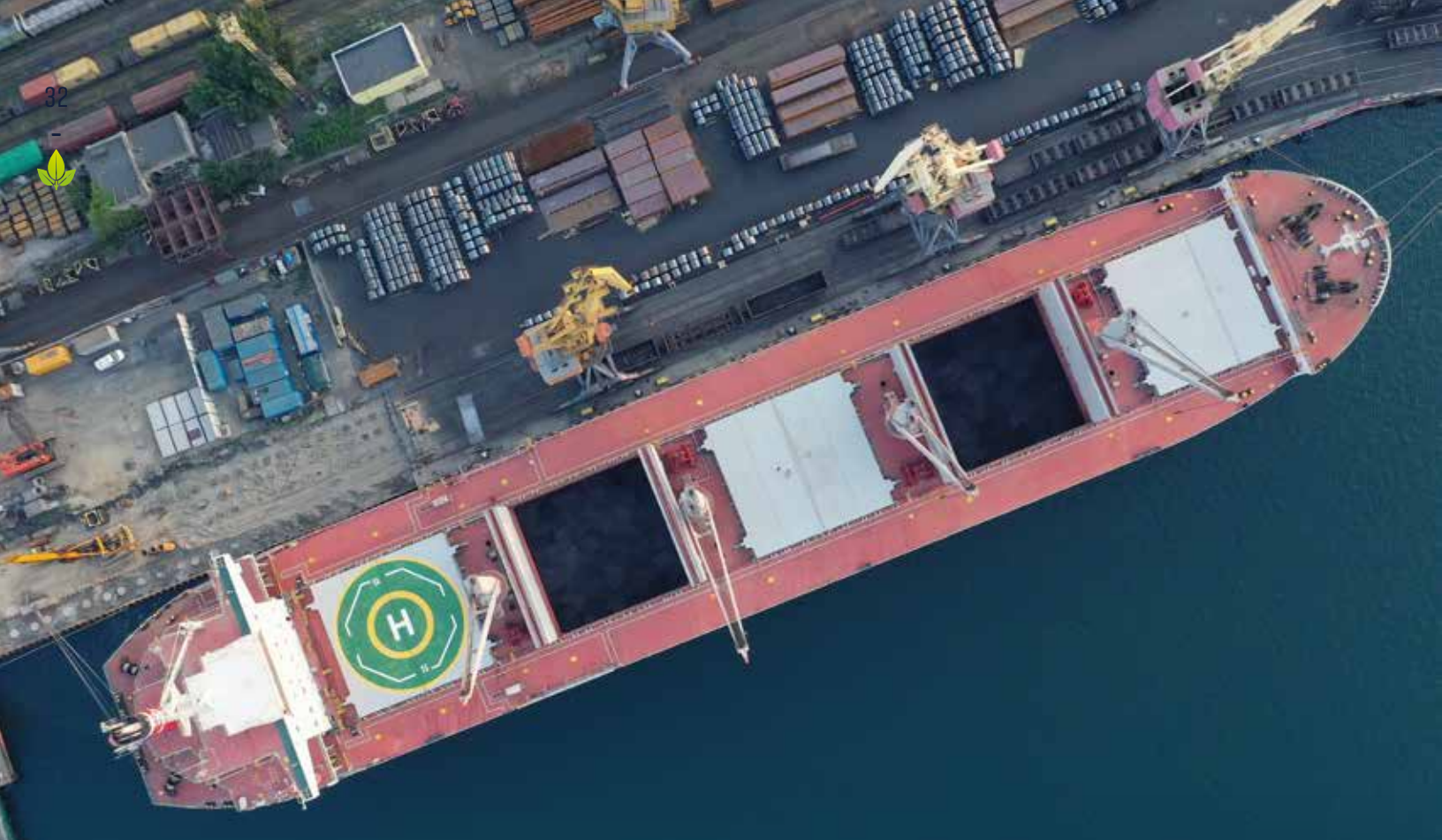### BOARD OF DIRECTORS

Improved consultation process

Green Marine updated the program development consultation process this year. Always inclusive and consensus-building, the process still undergoes technical advisement but now allows for additional time to obtain input from Green Marine's participants. It also increases the amount of transparency by improving documentation requirements, while keeping the process on schedule.

The proposals for the 2023 program were sent to the Technical Committees a week prior to their meetings in early November 2022. The meetings provided a chance for Green Marine's program managers to present and discuss the proposals with all the participants in attendance. Any subsequent feedback had to be submitted in writing to Green Marine within two weeks. The program managers reviewed and responded to all feedback, seeking additional clarification or expertise, as needed. The resulting revisions were integrated into the proposals which were returned to the participants with the tabulated feedback and responses. The program managers then presented the revised proposals to the Advisory Committees at their respective meetings in December and January. Once the Advisory Committees agreed on a proposal, it was sent to the Board of Directors for final approval.

40+ MEETINGS
(MAY 2022 – MAY 2023)

- Board of Directors (4)
- Advisory Committees (8)
- Technical Committees (3)
- Information Sessions for Participants (5)
- Working Groups (17)
- Ferry Forum (3)
- Verifiers' Debrief and Training (2)

UPCOMING CHALLENGES

For its 2023 program, with biodiversity in mind, Green Marine has introduced a new performance indicator for ports related to **aquatic ecosystems**. The goal is to characterize the health of aquatic ecosystems within a port's immediate and extended areas of influence, which include adjacent shoreline waters and nearby streams, rivers, and wetlands, so they can then be monitored and measurably improved.

The new indicator encourages ports to collaborate with organizations that may already be involved in the monitoring and/or improvement of certain aquatic ecosystems. As is always the case with a new indicator, reporting on aquatic ecosystems will be optional for 2023 to give participants a chance to familiarize themselves with all the criteria, after which it becomes obligatory.

Ship owners also have a major change in their 2023 criteria relating to Green Marine's formidable goal of achieving decarbonization by 2050 in order to reach the program's highest Level 5 criteria, as compared to the International Maritime Organization (IMO) target of a 50% reduction by that year. As a more ambitious step in that direction, Green Marine's yearly **GHG** reduction target for ship owners will increase from 1% to 1.8% in 2030 to attain a 40% reduction in GHG intensity from the 2008 baseline (a Level 4 requirement).

CURRENT PROGRAM IMPROVEMENTS

For the 2022 year of operations (the results of which are in this report), the program included various changes, the most important being the mandatory reporting for ports, terminals, and shipyards on their **community relations.** Once part of community impacts, the community relations criteria have been removed from that indicator which is now solely focused on nuisances such as excessive light or noise.

To keep the program sufficiently demanding beyond existing regulations, the **spill prevention and stormwater management** performance indicator applicable to landside participants was revised. The indicator now provides additional criteria options for exceeding the already comprehensive and demanding laws by most North American jurisdictions.

Ship owners   **Ports and Seaway**   **Terminals**   **Shipyards**

AQUATIC ECOSYSTEMS	AQUATIC INVASIVE SPECIES	CARGO RESIDUES	COMMUNITY IMPACTS	COMMUNITY RELATIONS
DRY BULK HANDLING & STORAGE	ENVIRONMENTAL LEADERSHIP	GREENHOUSE GAS EMISSIONS	OILY DISCHARGE	POLLUTANT AIR EMISSIONS NOX
POLLUTANT AIR EMISSIONS SOX & PM	SHIP RECYCLING	SPILL PREVENTION / STORMWATER MANAGEMENT	UNDERWATER NOISE	WASTE MANAGEMENT

PROGRAM DEVELOPMENT

In keeping with its core value of continual improvement, Green Marine always has a three-year development plan in the works for the program. The current agenda for the program's revision includes the following priorities over the upcoming months.

Ship owners:

· Once the U.S. Vessel Incidental Discharge National Standards of Performance are finalized, Green Marine will review the **aquatic invasive species** and **oily discharge** performance indicators to ensure the criteria beyond regulations is sufficiently demanding.

· The criteria for biofouling applicable to all ship owners will be reviewed and revised based on current voluntary guidelines that include IMO recommendations and suggestions put forward by the governments of Australia and New Zealand.

Under review for landside participants:

· The **GHG and air pollutants** performance indicators for the ports and the Seaway corporations and for the terminals are being reassessed, primarily to raise the quantitative target at Level 5 towards decarbonization.

· Level 4 and 5 criteria within the **spill prevention and stormwater management performance** indicator are being developed to integrate Environmentally Acceptable Lubricants.

· With the community relations criteria now removed, the **community impacts** performance indicator is being reviewed to assess the relevance of adding other impacts such as visual or vibrational nuisances, or air quality issues.

· The Level 5 community relations criteria will be replaced with new criteria for all landside participants to take into consideration the requirements under Canada's Annex 3-A Mitigation Plan to minimize potential climate change impacts.

· Progress and applicability in the ports' **underwater noise** indicator will be assessed for how the indicator might be improved to further advance environmental excellence.

GREEN MARINE EUROPE

In only its fourth year, Green Marine Europe is experiencing impressive growth.

The number of ship owners set to be certified this October 2023 in Bilbao, Spain, is increasing by 54% from 13 to 20, representing a total fleet of 487 vessels of various size and purpose. They include some of Europe's best-known cruise ships, passenger ferries, and shipping lines, such as CMA CGM, MSC Cruises, Louis Dreyfus Armateurs, and Stena Line.

The criteria for two performance indicators were revised for the 2023 program. Firstly, the **SOx air emissions** performance indicator criteria were adjusted to take into account technical advances of environmental benefit, such as shore power, to further lower emissions. The definition of fine particles was also made more specific. As for the **underwater noise** performance indicator, the revisions apply to the Level 4 criteria on speed reduction, as well as the Level 4 and 5 criteria that relate to one of the classification societies having ascertained a noise reduction. This indicator's adaptation reflects the willingness by Green Marine Europe and its members to anticipate future regulatory changes, particularly with the IMO's underwater noise guidelines currently under revision.

Responding to strong interest from **shipyard operators** from the outset, Green Marine Europe is in the **process of developing a complete set of performance indicators** for this new member sector. The criteria will take into consideration existing European regulations but otherwise remain closely aligned with the North American certification program. The goal is to complete the indicators this summer and to announce in October the initial shipyards applying for certification in 2024.

Green Marine Europe's five major industry organizations on board as association members bode well for attracting new participants with these associations serving as important ambassadors for the program.

The program is also garnering important recognition and expertise from the seven organizations that have become official supporters. They add to the strength derived from the European program being initially sparked and helmed by the not-for-profit Surfrider Foundation Europe in close partnership with Green Marine and will help to review and shape its future.

PROMOTING COMMITMENT!

It goes almost without saying that the 15th anniversary celebrations have occupied a place of great pride in Green Marine's communications over the past year.

The key aspects of the ever-evolving communications plan – encompassing the website, social media platforms, Green Marine Magazine, and communication resources to support participants – have all been focused on highlighting this important milestone. Celebrations started with a special magazine issue in the Fall 2022 devoted to the program's evolution and featuring recorded online congratulations and testimonials from Green Marine's network of members and friends.

To see or watch again

MAGAZINE

Green Marine Magazine's shift to a fully digital format in the Spring of 2022 looks promising. The initial statistics for Issues 25 and 26 distributed in June and December 2022 respectively show that the readers are interested! #digital!

3,100+
Magazine landing-page visits

5,100+
Articles read

3 minutes
Average reading time

SPREADING THE WORD

The newsletter is the transmission channel *par excellence* for news about Green Marine and its members. The monthly newsletter, which alternates its focus between Green Marine News Updates and A Look inside the Green Marine Network, reaches more than 4,600 subscribers.

10 **May 2022 to May 2023**
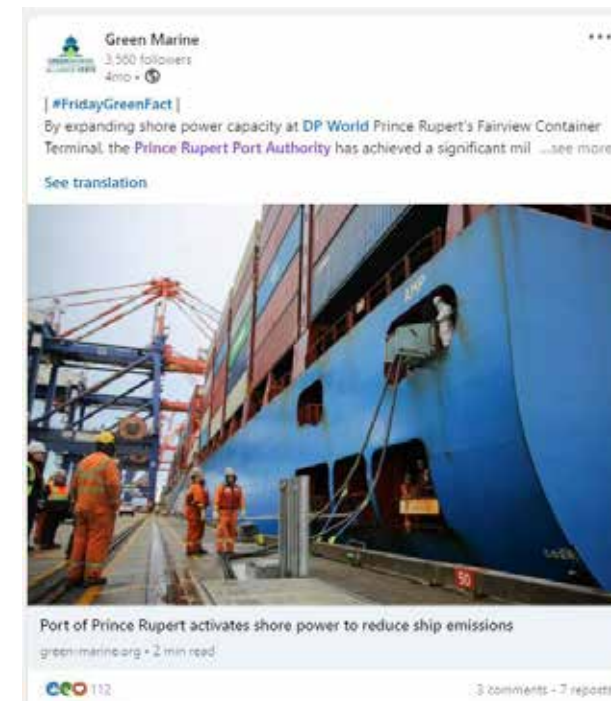**Newsletter issues**

45,000+
emails sent

36%
average newsletter opening rate

(which is 15 percentage points higher than the average email opening rate across all industries)[1]

[1] Source : 2022 Email Marketing Benchmarks Report
campaignmonitor.com/resources/knowledge-base/what-are-good-email-metrics

#FridayGreenFact

In addition to relating program information, Green Marine's communication team is committed to spreading environmental news about its members, primarily through its newsletter and on social media. The #FridayGreenFact hashtag is a great showcase for highlighting sustainability efforts!

#BRAGABOUTIT

The communications team also supports the participating members in disseminating their environmental performance results and their commitment to sustainable maritime transportation. For the second consecutive year, the team organized a week-long social media campaign to showcase Green Marine's efforts. More than a third of Green Marine participants (38%) shared at least one of the daily posts.
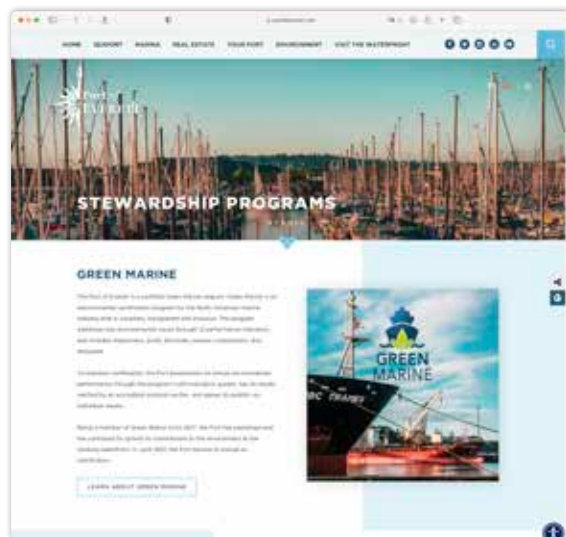

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
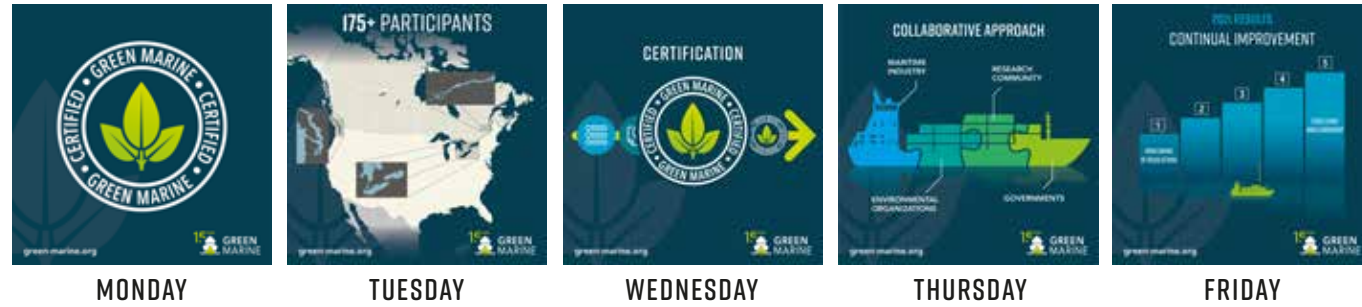
More and more participants, nearly three-quarters (73%), are displaying their certification on their website!

They also include Green Marine in their public activities.

Global Container Terminals community event.

As a source of pride and to promote a sense of belonging, Green Marine launched its online boutique with various clothing and other items featuring the organization's logo in either English or French.

green-marine.org/about/green-marine-boutique/

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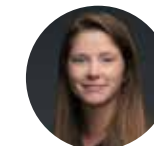President
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