

US EPA ARCHIVE DOCUMENT

Environmental Management Systems:  
Systematically Improving  
your Performance

EMS

US EPA ARCHIVE DOCUMENT

Shipbuilding & Ship Repair Sector



# Staying Afloat in the Face of Increased Competition

American shipbuilders are facing a period of intense international and domestic competition. A weakened economy is putting a financial strain on customers, reducing both demand for new ships and budgets for repair work.

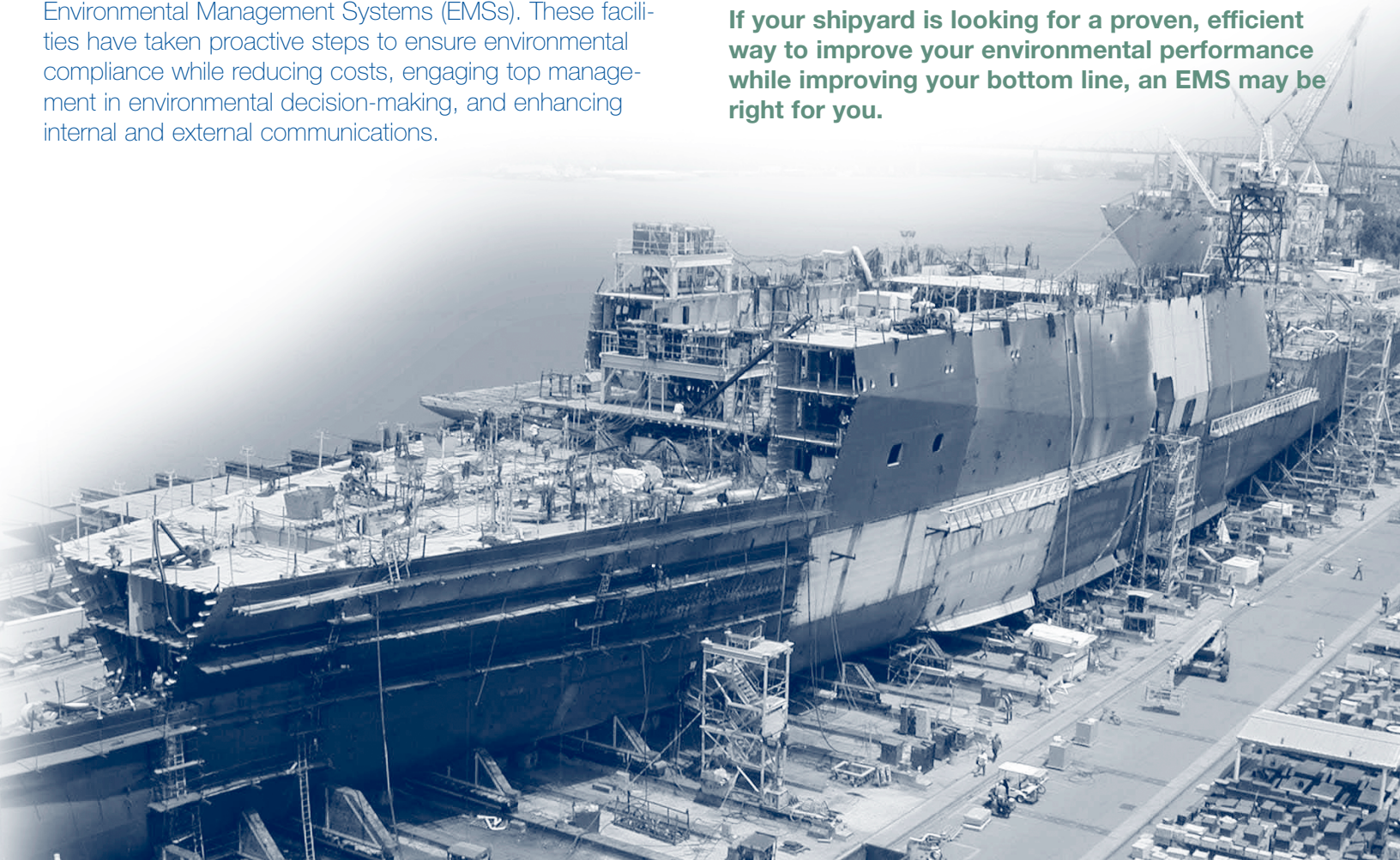
Customers have started to look for new ways to stretch their dollars, sometimes bypassing American shipbuilding or ship repair facilities for those abroad.

Many shipyards have found a way to remain competitive in this tight-fisted and uncertain era through the use of Environmental Management Systems (EMSs). These facilities have taken proactive steps to ensure environmental compliance while reducing costs, engaging top management in environmental decision-making, and enhancing internal and external communications.

Shipyards nationwide have already realized the following benefits by implementing an EMS:

- Reduced operating costs;
- Improved environmental compliance;
- Improved internal communication;
- A bolstered corporate image; and
- Enhanced environmental decision-making.

**If your shipyard is looking for a proven, efficient way to improve your environmental performance while improving your bottom line, an EMS may be right for you.**

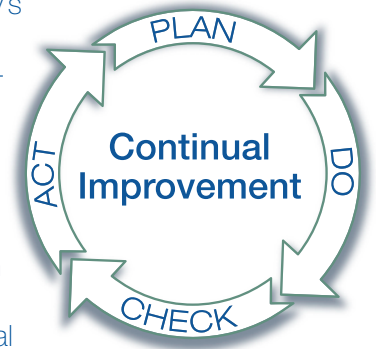


# Environmental Management System (EMS) Fundamentals

An EMS weaves environmental decision-making into the fabric of a shipyard's business, facilitating compliance while improving overall performance. Like the Quality Management Systems used at many shipyards, an EMS' systematic approach allows shipyards to be more efficient, more competitive, and better able to meet crucial challenges, such as increased security. While each EMS is unique, most follow the Plan-Do-Check-Act model.

A **Plan-Do-Check-Act approach** establishes a framework to examine the environmental aspects of your facility, then develop, implement, monitor, review, and revise the facility's environmental procedures over time to promote continual improvement.

Many shipyards already have components of an EMS in place that they can build upon, such as written and unwritten procedures, practices, and environmental training. Your facility may also want to consider integrating safety, quality, maintenance, public relations, and other facets of your business into one integrated system.



# Evaluate Your Operations for Opportunities to Reduce Costs

Many shipbuilding and ship repair facilities that have implemented an EMS have experienced significant cost savings attributed to:

- Lowered energy usage, resource conservation, and reduced material inputs;
- Reduced wastes and associated disposal costs; and
- Minimized redundant paperwork and reporting costs.

These cost reductions can be used to help facilities compete with domestic and international facilities—either by reducing overhead costs or by freeing up funds for investments in the facilities or employees. Upfront costs for an EMS can be quickly recovered through EMS' identification of money-saving pollution prevention initiatives and opportunities for continuous improvement in your operations.

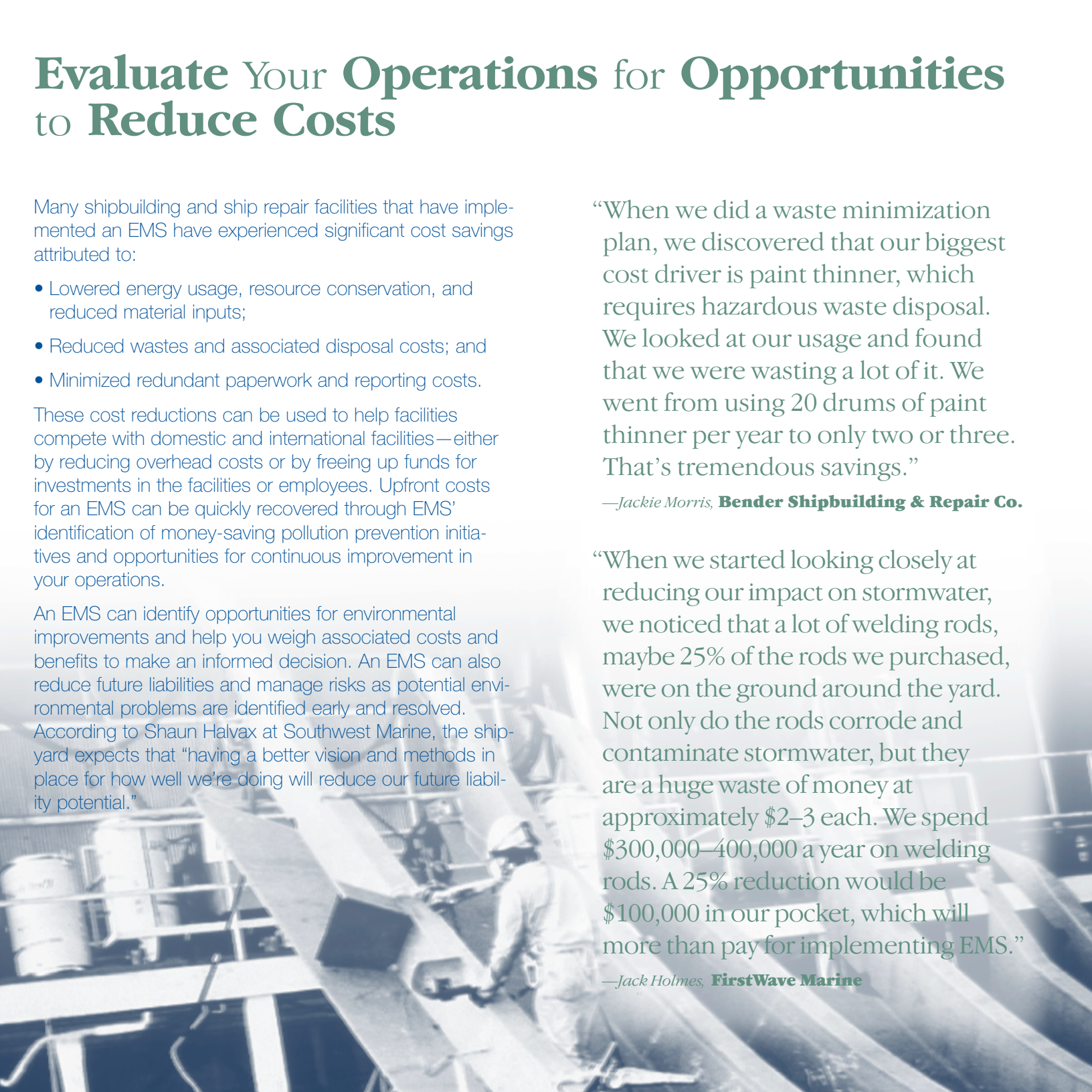
An EMS can identify opportunities for environmental improvements and help you weigh associated costs and benefits to make an informed decision. An EMS can also reduce future liabilities and manage risks as potential environmental problems are identified early and resolved. According to Shaun Halvax at Southwest Marine, the shipyard expects that “having a better vision and methods in place for how well we're doing will reduce our future liability potential.”

“When we did a waste minimization plan, we discovered that our biggest cost driver is paint thinner, which requires hazardous waste disposal. We looked at our usage and found that we were wasting a lot of it. We went from using 20 drums of paint thinner per year to only two or three. That's tremendous savings.”

—*Jackie Morris*, **Bender Shipbuilding & Repair Co.**

“When we started looking closely at reducing our impact on stormwater, we noticed that a lot of welding rods, maybe 25% of the rods we purchased, were on the ground around the yard. Not only do the rods corrode and contaminate stormwater, but they are a huge waste of money at approximately \$2–3 each. We spend \$300,000–400,000 a year on welding rods. A 25% reduction would be \$100,000 in our pocket, which will more than pay for implementing EMS.”

—*Jack Holmes*, **FirstWave Marine**



# Systematically Facilitate Environmental Compliance

American shipyards face an array of environmental regulations. An EMS' systematic approach can bring a sense of order to the environmental compliance process.

Many shipbuilding or ship repair facilities with EMSs agree that they now have greater assurance about maintaining environmental compliance. As noted by Steve Lacoste of Northrop Grumman Ship Systems, due to EMS development, the facility "definitely has a better understanding of our operations and associated environmental impacts, and is better able to focus in on areas that need improvement."

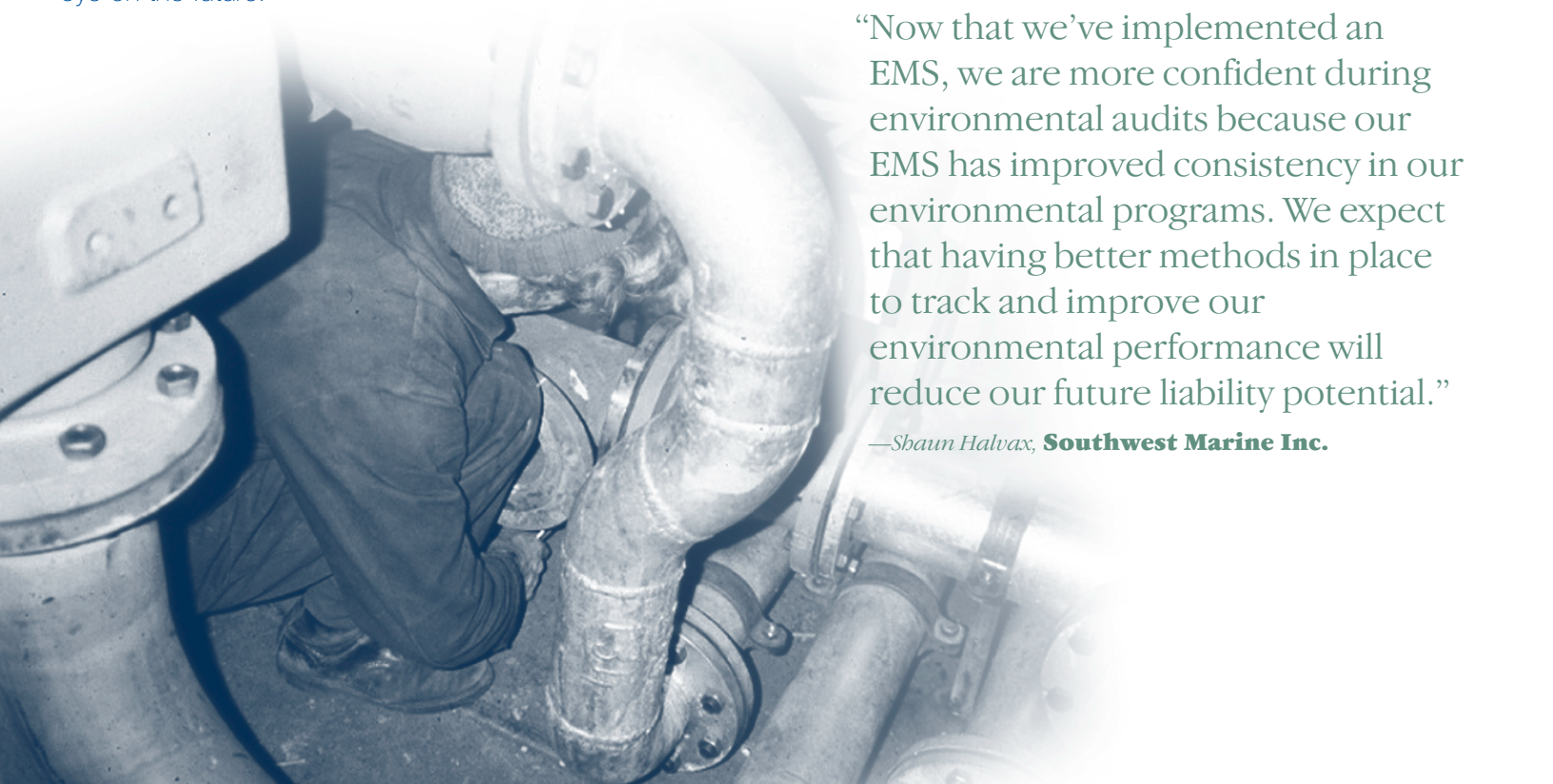
By implementing an EMS, your facility can stay in compliance with environmental regulations, avoid violations and fines that can damage your public image, and keep an eye on the future.

"Compliance assurance has certainly been the simplest and most direct benefit of our EMS. We now have better ways of ensuring compliance, for example: better checklists; more people checking; and follow-up systems that ensure that improvements take place. There's an increased sense of security."

—*Kay Freeman*, **Northrop Grumman Ship Systems**

"Now that we've implemented an EMS, we are more confident during environmental audits because our EMS has improved consistency in our environmental programs. We expect that having better methods in place to track and improve our environmental performance will reduce our future liability potential."

—*Sbaun Halvax*, **Southwest Marine Inc.**



# Enhance Internal Communication to Encourage Environmental Responsibility

Effective communication among shipyard employees plays a critical role in improving a facility's environmental performance and can also lead to increased employee morale and elevated employee retention rates.

Shipbuilding and ship repair facilities that communicate well internally often boast more informed, involved, and proactive employees who not only implement their assigned parts of the EMS, but who suggest other potential areas for improvement or cost-saving opportunities.

Shipyards such as Bath Iron Works, NASSCO, Coast Guard, FirstWave Marine and others reported improved internal discussions as a direct result of their EMS. In the case of the Coast Guard Shipyard, Robert McMenemy reported that dialogue improved "particularly between the facility and industrial commands at the yard."

"Through the implementation of our EMS, we made it clear that this was not just the environmental department's program. We leveraged our public relations staff and their outreach tools, and communicated messages about EMS to everyone—employees, contractors, and our customers."

—Donna Elks, **Electric Boat Corporation**

"We increased the flow of communications going out and increased the amount of training. Our employees now understand which environmental aspects they are responsible for."

—Vince Dickinson, **Bath Iron Works**



# Take a Proactive Stance on the Environment to Bolster Your Shipyard's Image

By sharing information about your environmental performance with your community, customers, and state, you can build credibility and trust. An EMS will help you establish a dialogue with those directly impacted by your facility's operations.

According to Vince Dickinson of Bath Iron Works, the facility pursued EMS to give the management program more structure, and, equally as important, to “develop a system that was more recognizable outside the company, especially to regulators and community stakeholders.”

Your shipyard can build a positive relationship with regulators by taking advantage of available state and national programs. States such as Texas, Virginia, and Oregon and national programs such as the U.S. Environmental Protection Agency's National Environmental Performance Track offer incentives ranging from public recognition to regulatory flexibility to facilities that consistently perform beyond regulatory compliance.

“Our EMS has absolutely improved our image in the community—particularly at a state level. Texas has passed a law encouraging EMS and there are increasingly benefits to companies that implement them.”

—*Jack Holmes*, **FirstWave Marine**

“Three years ago, we didn't fare well on an audit by one of our customers because we couldn't effectively demonstrate our environmental integrated management program. After our EMS was planned and implemented, we were able to show the auditors our EMS manual and describe our EMS during a concise two-hour session. That ensured the customer that environmental issues were being appropriately and effectively managed.”

—*Michael Chee*, **NASSCO**





# Lead Environmental Decision-Making at Your Yard

Your participation in the environmental decision-making process can ensure that your facility's environmental policy is relevant, that your facility is meeting its regulatory obligations, and that it is applying resources appropriately. The senior management review process established by an EMS ensures your continued involvement in environmental decisions and can lead to improved operations and reduced liabilities.

Facilities that have implemented an EMS have noted the benefit of increased senior management involvement in establishing metrics, and plans. According to Donna Elks from Electric Boat Corporation, "the owners actually got more involved and offered input into goals and opportunities."

"Once our EMS was in place, our Vice Presidents and Directors began to personally interact with environmental staff about facility and operational plans. There are regularly-planned exchanges of information with upper management now, which reflects a trend that environmental considerations are becoming a regular part of our business."

—*Kay Freeman*, **Northrop Grumman Ship Systems**

"Environmental metrics are now reviewed by Senior Management at monthly meetings. Any variations in metrics must be addressed by responsible management personnel. Because of this, there is greater accountability for environmental issues than there was previously."

—*Michael Chee*, **NASSCO**



# Get Started with Environmental Management Systems

Now that you've learned how an EMS can reduce costs, improve your business processes, and enhance your internal and external communication, here are steps you can take to get started.

## Take Advantage of Assistance and Tools Tailored to Shipyards

The American Shipbuilding Association and the Shipbuilders Council of America are working with EPA's Sector Strategies Program to encourage shipyards to adopt EMS. If your facility is a member of either of these associations, contact your association representative to take advantage of the customized training resources, expertise, and support available through this partnership. You can also work with your association to ensure that your facility's voice is heard in discussions with EPA about future environmental programs.

To begin developing your facility's own customized EMS, visit EPA's Sector Strategies Web site at [www.epa.gov/sectors/shipbuilding](http://www.epa.gov/sectors/shipbuilding) for an EMS implementation guide created specifically for the shipbuilding and ship repair industry. You can also find many resources related to EMS development and implementation as well as a list of Technical Assistance Providers near you on EPA's EMS Web site at [www.epa.gov/ems/](http://www.epa.gov/ems/). Other organizations, such as state environmental agencies and universities, may also offer EMS expertise.

## Start Small and Build Momentum

An EMS is based on common sense and intuitive business decisions. Learn from the tools listed above, then start by taking small, doable steps and build momentum from there. To be effective, you'll need proactive involvement from senior management, front-line workers, and supervisors throughout your facility. Keep the big picture in mind, but define reasonable expectations, set goals and time frames in line with your expectations, then monitor progress, making corrections where necessary. Capitalize on any elements of an EMS your facility may already have in place to advance to the next level in environmental management.



# Shipbuilding and Ship Repair Facilities Already Implementing EMS

Bath Iron Works

**A GENERAL DYNAMICS COMPANY**

**Bath Iron Works**

Bath, Maine  
[www.gdbiw.com](http://www.gdbiw.com)



**FirstWave Marine**

Houston, Texas  
[www.fwav.com](http://www.fwav.com)



**Bender Shipbuilding & Repair Company**

Mobile, Alabama  
[www.bendership.com](http://www.bendership.com)



**A GENERAL DYNAMICS COMPANY**

**National Steel and Shipbuilding Company (NASSCO)**

San Diego, California  
[www.nassco.com](http://www.nassco.com)



**Coast Guard Shipyard**

Baltimore, Maryland  
[www.uscg.mil/systems/gse/yard](http://www.uscg.mil/systems/gse/yard)

***NORTHROP GRUMMAN***

*Ship Systems*

**Northrop Grumman Ship Systems**

Pascagoula, Mississippi  
[www.ss.northropgrumman.com/index.cfm](http://www.ss.northropgrumman.com/index.cfm)

**GENERAL DYNAMICS**

Electric Boat

**Electric Boat Corporation**

Groton, Connecticut and Quonset Point, Rhode Island  
[www.gdeb.com](http://www.gdeb.com)



**Southwest Marine**

San Diego, California  
[www.swmarine.com](http://www.swmarine.com)

Discover what other leading shipyards across the country are finding—

# EMS is a Good Business Decision

“Before implementing an EMS, we weren’t sure all of the ways we would benefit from the system. But during implementation, we have found that EMS has improved our business by demonstrating responsible stewardship; increasing communication internally and with our customers; taking a proactive instead of reactive approach to the environment; avoiding risk and liabilities; and ultimately we believe it will reduce our costs. EMS is definitely a good business decision.”

—Donna Elks, **Electric Boat Corporation**



# Sector Strategies

*Insight • Innovation • Results*

EPA's Sector Strategies Program is a cooperative working relationship among government, trade groups, and other stakeholders to reduce pollution and ease the burden of regulation. For more information, visit [www.epa.gov/sectors](http://www.epa.gov/sectors) or contact your trade association.



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