

Marine Debris Prevention and Removal Program Implementation Plan for Year One



December 7, 2005

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ACKNOWLEDGEMENTS

The Marine Debris Team would like to acknowledge Sarah Morison of the National Oceanic and Atmospheric Administration budget office for her valuable contributions in the development of this report. We would also like to acknowledge Mary Donoghue, NOAA, for providing our team with her expertise in the field of marine debris. Additionally, we would like to thank John Farrell from the University of Rhode Island for his advice on budgetary and program implementation. Finally, the input from our classmates and faculty in the Environmental Sciences and Policy MPA program at Columbia University has been invaluable. In particular, we extend a special thanks to our faculty advisors, Dr. Robert Cook and Gary Weiskopf, for their support and guidance throughout this project. Their dedication, energy and professionalism have served as an inspiration to us all.

DISCLAIMER

This report was prepared for our two-semester Workshop in Applied Earth Systems Management in which our team was asked to analyze the Marine Debris Research Prevention and Reduction Act of 2005. The first semester focused on analyzing the science behind the problem of marine debris. During the second semester, we were charged with developing a program design for implementation of the Act in question. In doing so, we adopted the role of consultants under the name LukeReilly Consulting. While the Act currently resides in the House of Representatives, for the purposes of this exercise we assume that it was enacted on October 1, 2005. Though this implementation plan is a product of our own creation, we developed our program in accordance with NOAA's existing framework.

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EXECUTIVE SUMMARY

Marine debris can be thought of as any anthropogenic waste that makes its way into the world's oceans. It is primarily comprised of plastics and poses a significant threat to marine ecosystems, public health and navigational safety.

To address this problem the Marine Debris Research, Prevention and Reduction Act (S.362) was introduced to the Senate by Senator Daniel Inouye [D-HI] in February 2005, and became a Federal law on October 1, 2005. The Act represents a major progression toward effectively addressing the causes of marine debris by increasing collaboration at all levels of government, expanding knowledge about marine debris, and establishing outreach programs to engage society and the private sector.

The legislation creates a tripartite organizational structure to carry out various activities. The U.S. Coast Guard is presented with specific duties pertaining to the enforcement of marine debris regulations. The Interagency Marine Debris Committee is charged with developing and coordinating marine debris policy between Federal agencies, non-governmental agencies, and internationally. Finally, the National Oceanic and Atmospheric Administration (NOAA) is designated as lead agency, and is responsible for implementing the NOAA Marine Debris Prevention and Removal Program.

The NOAA Deputy Administrator for Oceans and Atmosphere has retained LukeReilly Consulting to create the implementation plan for the Marine Debris Prevention and Removal Program as legislated in the Act, in addition to serving as the transitional consultant team until permanent staff has been hired.

In its first year, the Marine Debris Prevention and Removal Program (MDP), as defined by LukeReilly Consulting, will have six key program areas: the Report to Congress, the Grant Program, the Education and Outreach Program, the Mapping and Research Initiative, the Fishing Gear Initiative and the Information Clearinghouse. In accordance with the activities mandated in the Act, LukeReilly Consulting has delineated the following major goals to be accomplished during Year One:

- Report to Congress – Submit report to congress (September 29, 2006)
- Grant Program – Identify potential partners; develop and promulgate grant guidelines (March 31, 2006)
- Education and Outreach Program – Investigate existing programs that may advance NOAA's ability to reach the public and other stakeholders; develop a network of public-private partnerships
- Mapping and Research Initiative – Gather baseline information on existing studies of marine debris sources and potential mapping tools; produce mapping report for Matrix Manager and Report Team (July 31, 2006)
- Fishing Gear Initiative – Gather baseline information on current fishing gear and potential alternatives; produce fishing gear report for the Matrix Manager and Report Team (July 31, 2006)
- Information Clearinghouse – Collect information, coordinate database formatting, content, and capacity requirements with National Ocean Service database portal designers

LukeReilly Consulting recommends housing the program office for the MDP in the National Ocean Service line office of NOAA to take advantage of this office's strategic position within the organization. To staff the six program elements, LukeReilly Consulting recommends hiring the following personnel within Year One:

- Interim Program Manager to oversee initial setup of the program
- Program Manager and Matrix Manager to oversee all program areas
- Senior Policy Analyst and Junior Policy Analyst to facilitate completion of the Report
- Director of Development who will divide his/her time between the Grant Program and the Report to Congress
- 2 Administrative Assistants who will divide their time between the Management Team and the Policy Analysts
- Grant Manager and Grant Assistant to establish the Grant Program
- Director of Education and Education and Outreach Program Assistant to develop and coordinate education and outreach programs within NOAA
- Mapping Expert and Fishing Gear Expert to initiate research and plan for Year Two implementation of their respective program areas
- Data Specialist to collect information and lay the foundation for establishment of the Clearinghouse in Year Two

To ensure that the MDP is meeting its implementation goals for the first year, LukeReilly Consulting has created a performance management plan. This plan establishes guidelines and procedures to ensure all program elements are on track in Year One, laying the groundwork for Year Two. The performance plan will work in conjunction with a master calendar that maintains the completion dates for the key tasks related to each of the six elements of the MDP. Together the master calendar and performance management plan will help ensure NOAA accomplishes all tasks mandated in the legislation.

LukeReilly Consulting has estimated that the first year costs for implementing the MDP, as outlined by the Act, will be the full \$2 million that Congress has appropriated for this purpose. For Year One, approximately 16%, or \$320,000, of the budget will go towards overall administrative costs. Based on the limited resources during this time period, LukeReilly Consulting recommends that NOAA prioritize the implementation of 1) the Report to Congress, 2) the Grant Program, and 3) the Education and Outreach Program, while laying the foundation for the Mapping and Research and Fishing Gear Initiatives as well as the Information Clearinghouse for full implementation in Year Two.

This systematic approach to implementing the MDP focuses on both the specific mandates of the legislation and a strategic, creative building-block approach that promotes communication and aligns priorities with a long-term view of the marine debris issue. As the program continues to build upon itself through Year Two and beyond, funding for the MDP will similarly increase; further stimulating innovative action that will hopefully one day relegate marine debris to the annals of history.

INTRODUCTION

The following report details the implementation plan that we, LukeReilly Consulting, have developed for the National Oceanic and Atmospheric Administration (NOAA) in order to fulfill the duties placed upon it by the passage of the Marine Debris Research, Prevention, and Reduction Act of 2005. The legislation mandates the creation of the NOAA Marine Debris Prevention and Removal Program (MDP) under which all of these duties will be housed. Accordingly, LukeReilly has developed a program design, a staffing and organizational structure, a budget, a master calendar, and a performance measurement system for Year One of the MDP, all of which is outlined in the following pages. A description of the problem of marine debris and a history of the legislative actions taken to address it precede the explanation of the MDP implementation plan. In addition to developing this report, LukeReilly Consulting has been hired by NOAA to serve as the transitional consulting team during the initiation of the MDP.

1. BACKGROUND

1.1 Problem of Marine Debris

The coastal and pelagic oceans are fundamentally important regions of biological productivity, geochemical cycling, and human utility. As providers of food, fuel, recreation and transportation to the global human community, the oceans represent a significant part of the world's economy.



Remote beach in southern Hawaii with marine debris.¹

(US Commission on Ocean Policy, 2004). Appendix A, Table A1 (p. 30) shows the changes in the ocean economy in the United States from 1990 to 2000 (Bureau of Labor Statistics et al, 2004). However, the oceans are becoming increasingly threatened by the byproducts of human resource consumption. A diverse array of manufactured objects and substances, from cars to plastics, are entering the oceans and imperiling the health of the marine ecosystem. This particular category of waste has come to be known as marine debris and is generally understood

to include any discarded, lost, or abandoned anthropogenic solid waste present in marine waterways. Marine debris can include cigarette filters, baby diapers, six-pack rings, beverage bottles, disposable syringes, plastic bags, bottle caps, fishing line and gear, and thousands of other objects (EPA, 2002.) Plastics comprise the majority of marine debris worldwide and pose a tremendous and long-lived threat to the marine environment. According to the U.S. Environmental Protection Agency (EPA) and the U.S. Ocean Conservancy, it can take up to 600 years for monofilament fish-

¹ Source: © Genny Anderson, 2003. Creator and Instructor for Marine Science. <http://www.biosbcc.net/ocean/marinesci/02ocean/hwfuture.htm>

ing lines, 450 years for plastic beverage bottles and disposable diapers, and 10 to 20 years for plastic bags to biodegrade (Ocean Conservancy, 1993).² The major sources of marine debris are storm water discharges, sewer overflows, litter, solid waste disposal and landfills, offshore mineral and oil exploration, industrial activities, and illegal dumping (EPA, 2002).

In seeking to understand the causes, effects, and potential mitigation strategies of marine debris, scientists and researchers have been encountered many challenges. Marine debris accumulates everywhere from polar shores to deep ocean trenches. The amount and type of debris in the ocean is difficult to measure, and the specific origin of debris and routes by which it travels while at sea are topics that require further research. A fair amount of evidence is accumulating, however, regarding the effects marine debris on ocean life, marine habitats, human health, and navigational safety (Thompson et al, 2004).

Impacts on Marine Life

Derelict fishing gear can become entangled around the necks, flippers, tails, or flukes of animals and can lead to infection, decreased mobility, amputation of limbs, and even death. Certain species such as sea turtles are especially vulnerable to marine debris due to their long life spans and delayed onset of reproductive maturity. Their population's capacity to recover from premature fatalities is quite low, thus, by increasing the fatality rate and slowing the birth rate of already vulnerable populations, marine debris may increase the risk of extinction. Marine debris has been shown to enter the marine food web at the microscopic level. Embrittlement is the breakdown of plastic into tiny plastic particulates. Most forms of plastic do not fully degrade, instead forming plastic "dust" which can then be picked up by marine filter feeders and passed up the food chain to accumulate in larger, more toxic levels (Gregory, 1996).



A penguin caught in a fishing net.³

Marine debris threatens the biodiversity of the oceans both through habitat destruction and through the transport of invasive species. Habitat destruction occurs when plastic sheeting smothers sea grass beds or other bottom-dwelling species, deadening important feeding and breeding grounds (Curlee, 1991). Coral reefs are damaged by ghost nets that steamroll through sensitive centers of biodiversity. Studies have shown that many types of bacterial activity thrive on floating plastics, including harmful algal bloom species (Maso et al, 2003). For this reason, plastics serve as vectors for invasive species transport across great distances and to great depths.

² Estimates based on information from the US National Park Service; Mote Marine Lab, Sarasota, FL.

³ Source: Barwon Bluff Marine Sanctuary. <http://www.barwonbluff.com.au/education/activities/conservation/conserve%20gallery/pages/a%20penguin.htm>. Last accessed December 5, 2005.

Impacts on Human Health and Safety

Marine debris poses a threat to human health and navigational safety. Medical waste, such as syringes, blood vials, bandages, and specimen cups, is often made of plastic and can become floatable debris. Used needles and other sharp objects can cause lacerations in humans, particularly if washed up on beaches, and have the potential to cause local or systematic infections. Marine debris threatens navigational safety by clogging cooling water intake valves or becoming entwined in the propellers of boats. A notable example of the navigational hazards posed by marine debris is the entanglement of the Russian mini submarine in August of 2005. The submarine's propeller is believed to have snagged on a fishing net some 625 feet below the ocean's surface (Kulkov, 2005).

As a trans-boundary pollutant that can deposit far from its source, marine debris presents political and economic challenges such as the proper allocation of remedial costs among private industry, polluters, victims, and governments. Perhaps most tragically though, as a pollutant that often winds up ignored on the high seas beyond any national jurisdiction, marine debris exemplifies the inadequacies of the current system of preserving the global commons.

1.2 Legislative Background

Marine pollution first became a focus of international attention in the early 1970s when the London Convention, addressing marine pollution by the dumping of wastes and other matter, came into being (London Convention, 1972). Since then, numerous international treaties and domestic laws and regulations have come into force in the United States designed to curtail marine degradation caused by sewage, industrial waste, and dumping from ships. A detailed list of these enactments is included as Appendix A (p. 30).

The consideration of marine debris as a pollutant, especially as a land-based pollutant, is a more recent phenomenon. In 1984, the National Marine Fisheries Service (NMFS) organized a workshop entitled "Fate and Impact of Marine Debris", the first major attempt to understand and address the problem of marine debris.⁴ Various international conferences, workshops, and symposia occurred as a result of the Fate and Impact of Marine Debris workshop of 1984 (Laist et al, 2005). One important conference was the North Pacific Rim Fishermen's Conference of 1987, which outlined research needs and industry outreach priorities and called for international coordination to quantify the losses of marine species caused by marine debris.

During the 1990s, efforts to address marine debris were sporadic or non-binding. In 1995, Congress stopped funding the Marine Entanglement Research Program, which allocated funding of \$600,000 to \$750,000 per year for the Marine Entanglement Research Program and was the sole financial resource for studying and addressing the impacts of marine debris. That same year, the National Research Council published a report of its two-year study on how to organize the implementation of Annex V, an international regulation preventing pollution from ships that was

⁴ *National Marine Fisheries Services (NMFS) is a division of NOAA. In 1982, the Marine Mammal Commission, created as an independent agency under the Marine Mammal Protection Act of 1972 to protect and conserve marine life, encouraged NMFS to organize a workshop to analyze the issue of marine debris and produce a framework with which to address it.*

ratified eight years earlier. Under the amended Marine Plastics Pollution Research and Control Act of 1987, Congress appointed NOAA to organize a marine debris coordinating committee. Congress allowed the committee to lapse in 1998 and it was not re-established until 2004 (Laist et al, 2005).

However, a global plan of action for the protection of the marine environment was adopted with the signing of the Washington Declaration in 1995. This document signaled a new chapter in the battle against marine degradation by declaring it the duty of individual states to preserve and protect the common marine environment, (bringing both the high seas dimension of the problem and land-based sources into the foreground). More specifically, the Washington Declaration urges states to:

- Identify the nature and severity of problems caused by marine pollution.
- Assess the severity and impacts of contaminants.
- Assess the sources of degradation.
- Establish priorities.
- Set management objectives for priority problems for source categories and areas affected.
- Identify, evaluate, and select strategies and measures.
- Set criteria for evaluating the effectiveness of strategies and measures

Although the Washington Declaration does not create any enforceable rights or laws, it does introduce important guiding principles for subsequent policy instruments.

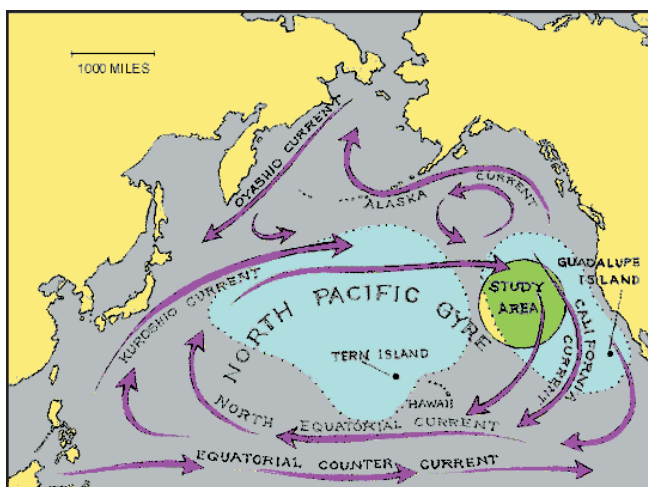
The current phase of the development of marine debris policy began with the passage of the Oceans Act of 2000 (Public Law 106-256), wherein the U.S. Commission on Ocean Policy was created. Authority was given under this Act to the President to appoint the Commission's 16 members. Retired Admiral James D. Watkins was selected as Chairman. Pursuant to the Oceans Act, the Watkins Committee was tasked with making recommendations for a coordinated and comprehensive national ocean policy. This report, entitled "An Ocean Blueprint for the 21st Century" (Ocean Blueprint), contains a chapter devoted to the issue of marine debris that sets out 6 recommendations:

1. NOAA should establish a marine debris management program that expands on and complements the EPA's program in this area (created in the Marine Plastic Pollution Research and Control Act of 1987). The NOAA program should be closely coordinated with EPA's activities, as well as with the significant efforts conducted by private citizens, state, local, and nongovernmental organizations.
2. NOAA and the EPA should coordinate and implement expanded marine debris control efforts, including: enforcement of existing laws; public outreach and education; partnerships with local governments, community groups, and industry; monitoring and identification; and research.
3. The National Ocean Council (NOC) should re-establish an interagency marine debris committee, co-chaired by NOAA and the EPA, and placed under the oversight of the NOC's Committee on Ocean Resource Management.

4. The U.S. Department of State and NOAA, working with the United Nations Food and Agriculture Organization and other appropriate entities, should develop a detailed plan of action to address derelict fishing gear around the world, to be implemented within large multi-national regions.
5. NOAA should work with all interested parties, governmental and private, to implement incentives or other effective programs for prevention, removal, and safe disposal of derelict fishing gear.
6. The U.S. Department of State should increase efforts internationally to ensure that there are adequate port reception facilities available for disposal of garbage from ships, particularly in Special Areas designated under Annex V of the International Convention for the Prevention of Pollution from Ships (US Commission on Ocean Policy, 2004).

In a 2004 general appropriations bill, Congress enacted many of the proposals from the Ocean Blueprint in provisional form, but without any detail as to implementation, including an appropriation of five million dollars for a NOAA Marine Debris Program. These recommendations became the basis for the Bush Administration's "U.S. Action Plan on Ocean Policy," published on December 17, 2004, and provided a solid foundation for S.362, the Marine Debris Research, Prevention and Reduction Act (the Act). The Act was introduced to the Senate by Senator Daniel Inouye [D-HI] on February 10, 2005.

The devastating effects of marine debris are perhaps most evident in Hawaii, which is the home state of Senator Inouye. The currents in the North Pacific Ocean where Hawaii is located move in a clockwise spiral, or gyre, which cause debris from the coasts of North America and Japan to circulate and collect in a region known as the "eastern garbage patch" (Moore, 2003). This zone, which is roughly the size of Texas, is located in the middle of the Pacific Ocean near the north-western Hawaiian Islands. Alaska, the home state of co-sponsor Senator Ted Stevens [R-AK], also suffers from the accumulation of marine garbage from the North Pacific Gyre. Both regions are vulnerable to Pacific coastal sources of land-based pollution, but more so from pollution caused by ships and various international sources. Hence, the Act includes both domestic and international procedures for addressing and mitigating the impacts of marine debris.



Currents in the North Pacific move in a clockwise spiral, or gyre, which tends to trap debris originating from sources along the North Pacific rim. Plastics and other waste have accumulated in the region, which includes the foraging areas of Pacific bird colonies, such as that of the Tern Island albatross, shown in blue, and that of the Guadalupe Island albatross, shown in green

Source: Moore, Charles, Trashed: Across the Pacific Ocean, Plastics, Plastics, Everywhere. Natural History v.112, n.9, Nov 03.

2. THE LEGISLATION

2.1 Purpose

Although there have been numerous legislative attempts to target marine debris over the years, these have fallen short of correcting the problem. Insufficient data and research, as well as poor regional and international coordination has made marine debris a difficult problem to address and support both financially and politically. The Marine Debris Research, Prevention and Reduction Act aims to address the problem of marine debris by providing a specific framework through which the recommendations set forth in the Ocean Blueprint report may be carried out. By increasing collaboration at all levels of government, expanding scientific knowledge, establishing outreach programs towards civil society and the private sector, and striving to foster greater international collaboration on the issue, the program implementation of the Marine Debris Prevention and Removal Program rectifies weaknesses in current efforts to mitigate the marine debris problem and has the potential to advance both understanding of and action against marine debris.

2.2 Duties

The legislation creates a tripartite organizational structure to carry out the mandated activities for the duration of five years. NOAA is designated as the lead agency and is responsible for implementing the Marine Debris Prevention and Removal Program (MDP) established by the Act. The U.S. Coast Guard is given specific duties pertaining to the enforcement of marine debris regulations through the Coast Guard Program. Finally, the Interagency Marine Debris Committee is charged with developing and coordinating marine debris policy among federal and non-governmental agencies, as well as internationally.

NOAA Marine Debris Prevention and Removal Program

The focal point of the Act is the MDP. As Administrator of the MDP, NOAA is responsible for producing a Report to Congress that assesses the current state of marine debris and provides recommendations for more effective prevention and reduction strategies. To accomplish the goals of the Act, NOAA will establish a Grant Program, the purposes of which is to:

- to provide researchers and institutions with supplementary funds to be used for projects that augment the existing knowledge base regarding marine debris prevention and mitigation strategies.
- to further study the adverse impacts of marine debris on marine ecosystems and human health and navigational safety.
- to bolster research efforts in the mapping of marine debris, the loss and/or discard of fishing gear, and other avenues of research where a lack of knowledge persists.

An additional goal of the MDP is to disseminate information on marine debris. Part of this task will be to create a Federal Information Clearinghouse, a database for all pertinent information regarding the issue of marine debris. This database will increase data sharing for researchers and other interested parties both domestically and internationally, which is an essential step for creating the collaboration necessary for achieving effective prevention and reduction strategies. Finally, NOAA is responsible for carrying out the crucial functions of increasing public awareness and engaging private industry and other stakeholders in the effort to reduce and prevent marine debris through the creation of an Education and Outreach Program. NOAA will also encourage industry and stakeholder involvement through the Grant Program and Mapping and Research

and Fishing Gear Initiatives, which will be discussed in subsequent sections of this report. On average, NOAA will be given \$10 million annually for the completion of these tasks, with less funding in the first year of the program.

Coast Guard Program

The Act establishes a program within the United States Coast Guard designed to help reduce violations of current marine debris policy. The Coast Guard will be allocated \$5 million annually for the fiscal years 2006 through 2010 to work toward reducing these violations. The Commandant of the Coast Guard will be responsible for proposing recommendations for regulatory changes to current policies in an effort to address gaps in implementation. More specifically, the Commandant will undertake measures to increase compliance of Annex V of the International Convention for the Prevention of Pollution from Ships (MARPOL; 1973) and Section 6 of the Act to Prevent Pollution from Ships (33 U.S.C. 1905), which specifically relate to the disposal of sea-based garbage. Finally, the Coast Guard will develop voluntary programs encouraging boaters to report violations of existing regulations. A summary of these and other marine-debris related legislation is provided in Appendix A (p. 30).

Interagency Marine Debris Committee

The Act recognizes the current lack of coordination at both the federal and international level on the issue of Marine Debris. Accordingly, the Act re-establishes the Interagency Marine Debris Committee (the Committee), composed of a variety of agencies to advise and coordinate with NOAA. The chairperson of the Committee will be a senior official from NOAA. Other federal agencies that will be involved in the Committee include the United States Coast Guard, the EPA, the United States Navy, the Maritime Administration of the Department of Transportation, the National Aeronautics and Space Administration, the United States Fish and Wildlife Service, the Department of State, and the Marine Mammal Commission. Additionally, other federal agencies interested in the issue of marine debris may participate as deemed appropriate by the NOAA Administrator. Non-federal entities that will be involved include state governments, Indian tribes, universities, research institutions, and non-government organizations.

The Committee will perform several important roles as outlined by the legislation, which will be:

- to work to increase coordination and collaboration among all levels of government as well as the private sector
- to create an annual report to Congress that will detail the progress of the MDP and identify sources, effects, prevention strategies, recommendations, and alternatives for marine debris, as well as social and economic analyses of these alternatives
- to develop a strategy to improve international coordination on reducing marine debris
- to institute effective marine debris reduction strategies in international treaties, facilitate partnerships, and assist in multilateral negotiations related to marine debris, as required.

3. NOAA MARINE DEBRIS PREVENTION AND REMOVAL PROGRAM: AN IMPLEMENTATION PLAN

3.1 Overview of Marine Debris Prevention and Removal Program

The legislation creates a Marine Debris Prevention and Removal Program (MDP) within NOAA that is responsible for coordinating all of NOAA's functions as defined by the Act. Based upon the legislation, successful implementation of the MDP requires that NOAA implement the following six tasks:

1. Report to Congress: NOAA, in collaboration with the Interagency Marine Debris Committee must develop a comprehensive Report to Congress by September 29, 2006 (Section 4).
2. Grant Program: NOAA must initiate a Grant Program that will be the basis of funding for future marine debris projects (Section 5).
3. Education and Outreach Program: NOAA must develop an Education and Outreach Program to increase dissemination of information to the public and other stakeholders (Section 6).
4. Mapping Initiative: NOAA will map and assess marine debris and its impacts on the marine environment. (Section 7).
5. Fishing Gear Initiative: This initiative will address the problems associated with abandoned fishing gear. (Section 8)
6. Information Clearinghouse: NOAA, in coordination with the Committee, is responsible for maintaining an information database containing all relevant information to marine debris. (Section 9)

As requested by NOAA, LukeReilly Consulting has focused on developing an implementation plan for Year One of the program. Based on the limited resources during the first year, LukeReilly Consulting recommends that NOAA prioritize the implementation of the first three tasks while laying the foundation of the final three tasks for full implementation in Year Two.

3.2 Program Strategy

The program design places the disparate program elements of the MDP within existing NOAA offices to maximize resources. The program strategy seeks to expand upon existing efforts with NOAA. This approach necessitates a decentralized organizational structure. Herein, the program design will implement matrix management to ensure effective communication between all employees of the MDP.

3.3 Administrative Offices and Staff

LukeReilly Consulting recommends housing the program office in the National Ocean Service line office of NOAA (See Figure 1). LukeReilly Consulting believes this is the best location for the MDP because this line office aims to:

1. Integrate its observation and data management systems into a single National Ocean Service Internet portal that will in turn be integrated into a common NOAA architecture;
2. Develop and implement more effective educational programs and tools for coastal managers and local decision makers to facilitate more environmentally sustainable management;
3. Support short- and long-term research to understand and predict the effects of natural and human-caused stresses on our coastal resources;

4. Continue working with such organizations as the United Nations Environment Programme, the International Maritime Organization, the World Conservation Union and the International Coral Reef Initiative on cross-boundary issues that affect the world's marine and coastal environments and mapping and charting efforts.

The MDP office will receive additional management support through the Program Planning and Integration (PPI) line office, an office created specifically to manage NOAA's various crosscutting programs. The role of the PPI office is particularly important for the MDP because it provides an effective way to utilize the existing resources dispersed throughout NOAA's various line offices while ensuring effective collaboration throughout the MDP.

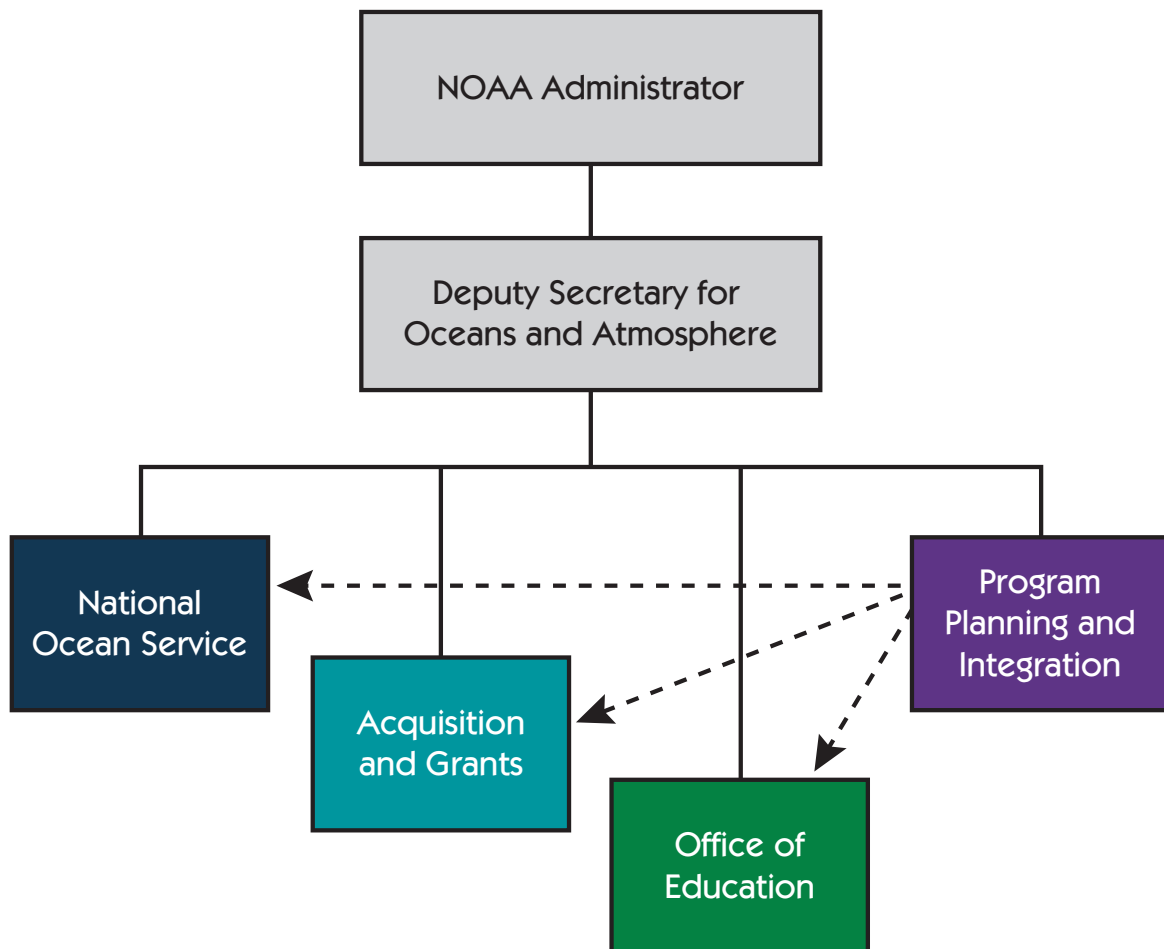


Figure 1. Marine Debris Program Organizational Chart within NOAA

Interim Program Organization

Since the legislation was enacted on October 1, 2005, a quick response is necessary in order to ensure the completion of the Report to Congress and the promulgation of the guidelines for the Grant Program within the timeframe mandated by the Act. To meet these deadlines, the NOAA Deputy Administrator for Oceans and Atmosphere has retained LukeReilly Consulting to serve as a transitional consulting team during the initiation of the MDP.

Additionally, the Deputy Administrator identified an Interim Program Director from within NOAA to oversee the initial setup of the program for the coming months. The Interim Program Director has three main functions: 1) to oversee the LukeReilly Consulting team in their work as related to program initiation, in particular the Report to Congress; 2) to set up the offices for the Program by January 15, 2006; and 3) to hire the key staff necessary for overall program functioning by January 31, 2006.

Full-Time Program Staff

The full-time staff for the MDP includes a Program Manager, a Matrix Manager, and two Administrative Assistants. The Program Manager, working out of the MDP office within the National Ocean Service, is responsible for the overall implementation of the MDP. S/he will be instrumental in implementing research and abatement strategies by setting grant priorities, overseeing research grant projects, and integrating marine debris data into the developing Information Clearinghouse. The Matrix Manager will be housed within the PPI. His/Her role is to coordinate process functioning of the MDP across NOAA and with the Interagency Marine Debris Committee. Each manager will receive assistance from an Administrative Assistant. In addition to traditional administrative duties, the Administrative Assistants will serve as liaisons between with Program Manager, the Matrix Manager, and all other line office managers. During Year One, the MDP Administrative Asisstants will split their time evenly between overall program administration and the Report to Congress. In addition to these key individuals, other staff members will work within the various program elements, as outlined in Figure 2. Sections 4-9 contain more detail on the duties for each of these staff members.

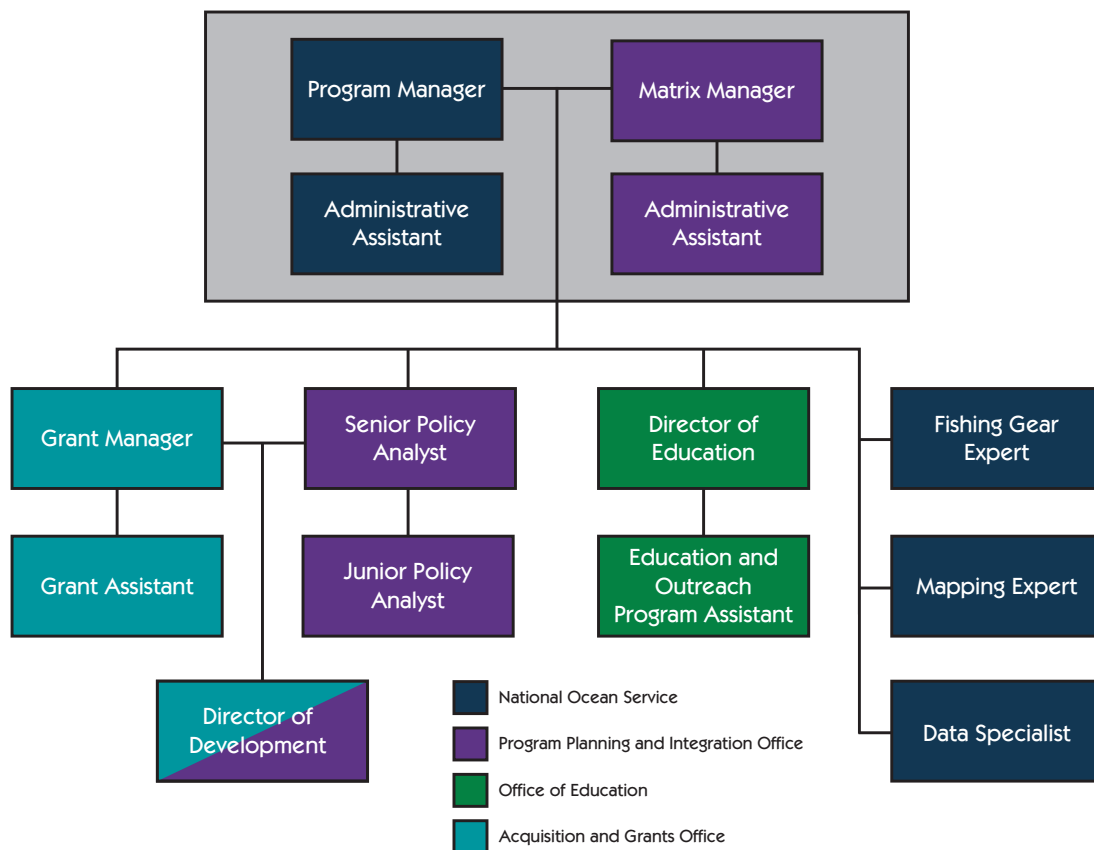


Figure 2. Marine Debris Program Staffing Organizational Plan

3.4 Program Budget

The MDP Fiscal Year will be from October 1 to September 31. Although the MDP has been appropriated \$10 million annually for five years to fulfill the above requirements, only \$3 million will be allocated during the first year to both the NOAA and Coast Guard Programs. Since the Act allocates two-thirds of the total funding to NOAA and one-third to the Coast Guard, we estimate that two-thirds of the \$3 million outlay for year one, or \$2 million, will be available for NOAA's use during year one. This \$2 million will be used primarily to complete the Report to Congress and to establish the Grant Program. A portion of the \$2 million is budgeted towards program administration, education and outreach, and the initiation of the Year Two activities. Figure 3 and Table 1 summarizes the distribution of these costs across the various MDP elements. For Year One, approximately 16%, or \$320,000, of the budget will go towards overall administrative costs. This covers base salaries, fringe benefits,⁵ and other services, such as supplies, rent, and computers. Further detail about the MDP budget is located in Sections 4-9 and Appendix D.⁶ (p. 45)

Table 1: MDP Budget	
Program Administration	
Personnel Services	\$214,515
OTPS*	\$102,333
Total Program Administration	\$316,848
Report to Congress	
Personnel Services	\$207,318
OTPS	\$305,333
Total Report to Congress	\$512,651
Grants Program	
Personnel Services	\$131,397
OTPS	\$76,556
Total Grants Program	\$207,953
Education and Outreach Program	
Personnel Services	\$100,380
OTPS	\$56,000
Total Education and Outreach	\$156,380
Year Two Initiation	
Personnel Services	\$224,175
OTPS	\$581,993
Total Year Two Initiation	\$806,168
Total MDP Costs	\$2,000,000
*OTPS: Other than Personnel Services	

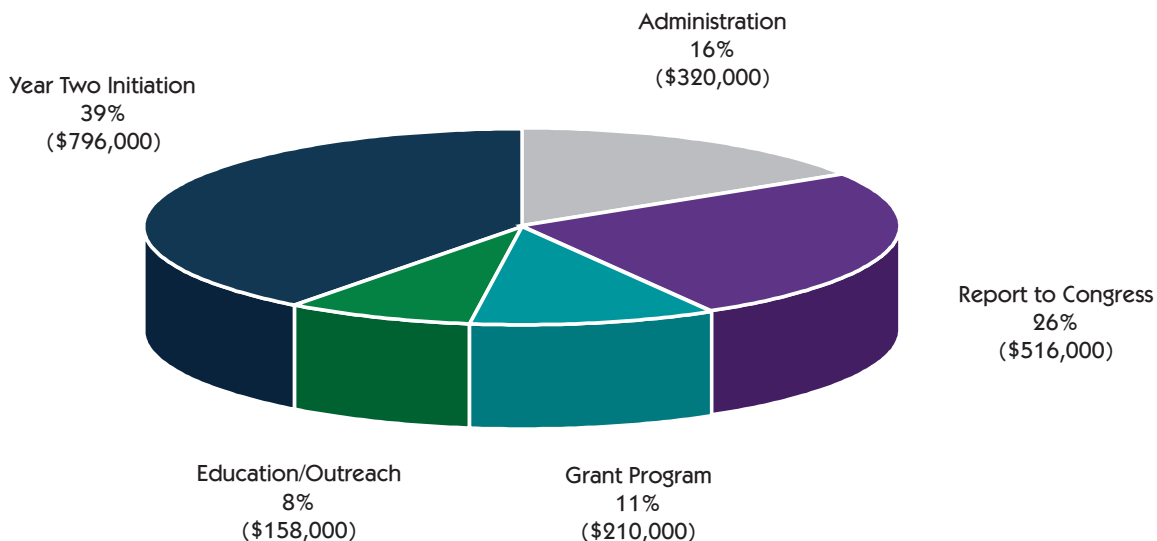


Figure 3. Program Budget

⁵ Fringe benefits are calculated at 26%.

⁶ LukeReilly Consulting would like to extend a special thanks to Sarah Morison in the NOAA Budget Office for her assistance in the creation of this budget.

3.5 NOAA as Interagency Committee Chair

During the initial phase of the MDP implementation, the LukeReilly Consulting team and the Interim Program Manager will initiate several meetings with each official on the Interagency Marine Debris Committee. In addition to serving as introductory meetings, these meetings are crucial for initiation of the outline for the Report to Congress.

As chair of the Interagency Marine Debris Committee, NOAA is responsible for organizing and attending the two annual Committee meetings. During Year One, the meetings are scheduled for April 1, 2006 and October 1, 2006. These dates coincide with report deadlines as detailed in Section 4.

3.6 Program Elements

The remainder of this report provides a detailed analysis of the six program elements. Building upon the requirements in the legislation, LukeReilly Consulting has designed each initiative so as to utilize the existing resources within NOAA and the marine debris research community.

4. REPORT TO CONGRESS

The Act requires that the Committee complete and submit a Report to Congress (the Report) no later than 12 months after passage of the Act. Accordingly, the Report must be submitted no later than September 29, 2006. As Chairperson of the Committee, NOAA is responsible for ensuring the completion of this task.

4.1 Goals

The Report should synthesize the large, but disjointed, body of information currently available on the sources and the impacts of marine debris, call attention to priority areas, and provide recommendations for future efforts within the MDP and outside of NOAA. It should also include an analysis of the social and economics costs and benefits to these alternative and removal strategies, and recommendations on how to facilitate national and international coordination to resolve this global crisis.

4.2 Implementation

The Report will be derived from the knowledge, resources, and insights of several parties: researchers and experts in the field of marine biology and oceanography, non-governmental organizations, marine-related industries, and federal agencies and organizations. To ensure that the Report accurately represents all involved parties, a Director of Development will be hired to facilitate coordination among members of the Interagency Committee, employees of the MDP, and outside parties.

Successful completion of this task requires that the process of writing the report begin immediately. Consultants from LukeReilly have been hired to begin gathering information on marine debris and to draft an initial outline for the Report. Creation of the outline will be accomplished in coordination with the Program Manager, the Matrix Manager, and the Committee members in time for the first Interagency Committee meeting on April 1, 2006. The two Administrative Assistants hired for the Program and Matrix Managers will be available as necessary to help complete the Report. As this task will require significant coordination between the line offices, the report team will be housed in the PPI office.

The Senior Policy Analyst and Junior Policy Analyst will be hired by January 31, 2006 for the preparation and writing of the Report. Their responsibilities will be to:

- collaborate with members of the Committee and the Director of Development
- incorporate information provided to them by Mapping and Fishing Gear Experts
- write the Report using the outline established by LukeReilly Consulting

A Director of Development will be utilized part-time to:

- fulfill the Act's instruction to consult with other government agencies, non-government organizations, and private industries (such as the fishing gear industry, plastics industry, and recreational boating industries) to solicit input for the Report to Congress
- meet with the NOAA Ocean Council, an advisory board consisting of the assistant administrators from each of the NOAA line offices, to ensure their input is included in the Report to Congress

The Program Budget allocates an estimated \$516,000 dollars for the completion of the Report. The personnel costs roughly total \$210,600, which includes the salaries for the Senior and Junior Policy Analysts, a percentage of the salaries for the two Administrative Assistants, and a percentage of the salary for the Director of Development. Other than personnel services is allocated roughly \$305,000. These services include the salaries of the consultants, Interagency Meeting expenses, rent/utility bills, and travel expenditures. For more information, please see Appendix D. (p. 45)

Implementation
<p>Goals:</p> <ul style="list-style-type: none"> • Submit Report to Congress (September 29, 2006) <p>Key Staff:</p> <ul style="list-style-type: none"> • LukeReilly Consulting (contracted November 2005 - March 2006) • Senior Policy Analyst (hired by January 31, 2006) • Junior Policy Analyst (hired by January 31, 2006) • Director of Development – 50% (hired by January 31, 2006) <p>Overall Budget: \$516,000</p> <p>Line Office: Program Planning and Integration</p>

4.3 Performance Measurement

To ensure successful completion of the Report, the initial steps include the submission of an outline to the Committee at its first meeting occurring in November 2005 and divide the labor for writing the report. Subsequently, report sections will be collected from the Committee members to be edited and revised. To allow sufficient time for edits and revisions, the Analysts will submit three drafts of the report for review by the Program Manager, Matrix Manager, and Committee members before the final submission to Congress. The final Report will be submitted to Congress by September 29, 2006.

During this process, the consultants and the Policy Analysts will submit monthly progress reports to the Program Manager and Matrix Manager. During the critical periods of March through May and July through September, the Analysts will complete progress reports every two weeks. The Report Team will also hold monthly meetings with the Committee members. The timely completion and submissions of various drafts will be an indicator of whether the Report to Congress is being successfully completed. Additionally, the success of the Report to Congress is contingent on the adoption of the report recommendations by MDP in subsequent years and the reallocation of Year Two MDP budget to address priority areas that are outlined in the Report. The table below summarizes the performance input and output indicators and success indicators of the Report to Congress. Further details of the performance measurement system are provided in Appendix E. (p. 50)

Input and Output Indicators	Success Indicators
<ul style="list-style-type: none"> • Staff time and budgetary spending • Timely submission of sections from committee members • Timely completion of various drafts • Final Report to Congress submission 	<ul style="list-style-type: none"> • Acceptance of the Report by Congress • Adoption of report recommendations by MDP in subsequent years • Reallocation of Year Two MDP budget to address priority areas as outlined in the Report

4.4 Subsequent Years

In subsequent years, the Program and Matrix Managers will work full-time for the program administration division. The program administration, which includes the Program and Matrix Managers and Administrative Assistants, in coordination with the Committee, will submit annual progress Reports to Congress.

5. GRANT PROGRAM

The Act requires that NOAA establish a Grant Program to provide funding for projects that address research, prevention, and mitigation of marine debris and that study its adverse impacts on marine ecosystems. A major component of this program is that it requires a 50% matching of funds from non-federal entities for each project. However, it is important to note that NOAA may waive this requirement, if necessary, for the completion of projects it deems of major importance. The purpose of the Grant Program is to bolster research efforts in the mapping of marine debris, to study the loss of fishing gear, and to pursue other avenues of research by encouraging the involvement of private industries.

5.1 Goals

NOAA must set up grant management staffing, prepare grant guidelines and procedures, publish requests for proposals, and award grants as time permits.

5.2 Implementation

Since the Act directs that NOAA use standard grant-making procedures, LukeReilly Consulting recommends that the Grant Program reside within the NOAA Acquisition and Grants Office. The Grant Division of this line office routinely awards, administers, and closes-out grants for all of the NOAA line offices. The Grant Division also administers a listing of funding opportunities on Grants On Line, a web based announcement system for the U.S. Federal Government. Additionally, LukeReilly Consulting recommends adding contractual arrangements to this Grant Program, managed by the Matrix Manager, with non-governmental organizations, such as the National Fish and Wildlife Foundation (NFWF).⁷

⁷ The NFWF specializes in administering matching grant program, such as that mandated by this legislation, and its networking expertise in this field will expand the opportunities for publicly-privately funded marine debris programs.

Based on the timeframe mandated in the legislation, NOAA must create and disseminate grant guidelines by March 31, 2006. In order to ensure the timely completion of these activities, NOAA should hire a full-time Grant Manager and a Grant Assistant by January 31, 2006. The Grant Manager will be a full-time, permanent position working within the Grant Division of the Acquisition and Grants Office. S/he must:

- oversee the business management and program planning aspects of grants and cooperative agreements.
- collaborate with the Committee and other groups in the formulation of program policies and procedures relating to the management of grant and cooperative agreement programs.

In addition to the creation and dissemination of grant guidelines, the Grant Program team must also identify potential partners in order to meet the matching fund requirement of the legislation. A Director of Development (shared with the Report team) will be utilized to assist in this effort. The Director of Development will meet weekly with the Grant Manager to give an update on the progress of the partnership building. LukeReilly Consulting recommends that the Director of Development aim to initiate at least ten contacts by June 1, 2006.

LukeReilly Consulting has budgeted approximately \$210,000 for the initiation of the Grant Program. In addition to staffing costs, several trips were allocated for meetings regarding both grant guideline development and partnership building.

Implementation
<p>Goals:</p> <ul style="list-style-type: none"> • Develop and promulgate grant guidelines (March 31, 2006) • Identify potential partners for fund matching requirement of Grant Program • Review and award grants within 4 months of receiving proposals <p>Key Staff:</p> <ul style="list-style-type: none"> • Grant Manager (hired by January 31, 2006) • Grant Assistant (hired by January 31, 2006) • Director of Development – 50% (hired by January 31, 2006) <p>Overall Budget: \$210,000</p> <p>Line Office: Acquisition and Grants Office</p>

5.3 Performance Measurement

The Grant Manager will be responsible for providing monthly progress reports to the Matrix Manager, as well as updating the internal master database, containing information on contacts established, project progress, and other vital information. The Grant Manager is responsible for tracking information regarding current use of budget allocations and the current status of the various components of the program. The major deadlines are:

1. first draft of grant guidelines on March 3, 2006
2. second draft due March, 17, 2006
3. the final submission by March 31, 2006.

In order to measure whether the Grant Program is on schedule, Submission of draft guidelines and final grant guidelines will be used to measure whether the Grant Program is on schedule. Additionally, the Grant Program team will record the program's success by tracking the number of proposals received throughout the life of the Grant Program. Finally, the Grant Program team will focus on ensuring compatibility with NOAA's current grant system, ensuring a smooth integration into the current system. If for any reason the Grant Program team is not completing its tasks in a timely manner, the Matrix Manager may reallocate resources as necessary. Below is a summary of the input and output indicators and success indicators for the implementation of the Grant Program. Further details of the performance measurement system are provided in Appendix E. (p. 45)

Input and Output Indicators	Success Indicators
<ul style="list-style-type: none"> • Staff time and budgetary spending • Timely submission of draft guidelines • Final grant guideline submission • Promulgation of guidelines 	<ul style="list-style-type: none"> • Number of grant proposals received • Compatibility with current NOAA grant system

5.4 Subsequent Years

After initial development of the Grant Program guidelines, it is expected that additional permanent staff will be hired for Year Two to help with grant distribution. Ideally, the initial grants will be awarded at the end of Year One and will consist of the remaining funding after the mandated Year One program directives have been fulfilled. If grants are not awarded within Year One, the first grants will be awarded at the beginning of Year Two.

6. EDUCATION & OUTREACH

The Act requires NOAA establish an Education and Outreach Program to undertake education and outreach endeavors for the dissemination of information on the sources of marine debris, the threats associated with marine debris, and approaches to assessing, reducing, and preventing its impacts on the marine environment and navigational safety. This program aims to increase outreach to the public and other stakeholders for informational purposes and to cultivate public-private partnerships with these stakeholders. In particular, this initiative seeks to engage the fishing industry in order to mitigate the adverse impacts that discarded fishing gear has on the marine environment. The Education and Outreach Program therefore should target the general public and members of the fishing and fishing gear industries. Finally, new education plans should coordinate with current programs established by the Marine Plastic Pollution Research and Control Act of 1987 so resources and efforts are not duplicated unnecessarily.

6.1 Goals

The Education and Outreach Program should build upon existing programs that may advance NOAA's ability to reach the public and other stakeholders. The program will:

- develop a network of public-private partnerships for outreach and dissemination of information
- create a marine debris curriculum in coordination with existing oceanographic and biological curricula
- establish a framework for the development of all areas of education and outreach components of the Act for subsequent years.

6.2 Implementation

The Education and Outreach Program will be housed within NOAA's Office of Education. This office works in conjunction with the NOAA Education Council and is in charge of developing and coordinating education and outreach programs throughout NOAA. The National Marine Fisheries (NMF) line office has its own education division, which the MDP may use in building relationships within the fishing industry. Additionally, the NMF has a marine mammal health program, providing a potential partner in the development of a marine mammal education component for the MDP. Furthermore, the National Sea Grant Program links NOAA to educational institutions and universities and will likely be utilized to achieve MDP Education and Outreach Program goals.

To ensure that the education and outreach goals are completed in a timely manner NOAA should hire two full-time employees, a Director of Education and an Education and Outreach Program Assistant by January 31, 2006 and March 1, 2006, respectively. Both of these individuals will be permanent employees working out of the Office of Education. The Director of Education will manage and coordinate the Education and Outreach Program. In addition, the Director of Educa-

Implementation

Goals:

- Investigate existing programs that may advance NOAA's ability to reach the public and other stakeholders
- Develop a network of public-private partnerships for outreach and dissemination of information
- Create a marine debris curriculum in coordination with existing oceanographic and biological curricula
- Establish a framework for the development of all areas of education and outreach components of the Act for subsequent years

Key Staff:

- Director of Education (hired by January 31, 2006)
- Education and Outreach Program Assistant (hired by March 1, 2006)

Overall Budget: \$158,000

Line Office: Office of Education

tion will work with the Program and Matrix Managers towards developing, recommending, and supporting the broad goals and policies of the Education and Outreach Program. The Education and Outreach Program Assistant will be responsible for assisting the Director of Education as necessary.

LukeReilly Consulting has allocated an estimated \$158,000 for Year One in order to accommodate the salaries of the two staff members in addition to the estimated cost of office space, travel, and supplies. See Appendices C (p. 37) and D (p. 45), respectively, for more detailed information regarding the job descriptions and the budget.

6.3 Performance Measurement

The Director of Education, with the help of the Education and Outreach Program Assistant, is responsible for providing progress reports to the Matrix Manager that contain updates on the progress of public-private partnership building, the creation of educational curriculum, and volunteer activities. The Director of Education will provide a briefing on the work plan and program goals and the curriculum to the entire MDP staff on March 20, 2006 and on May 22, 2006, respectively. Additionally, the Education and Outreach Program team will regularly update the internal master database, for the purpose of tracking contacts established, the number of meetings and outcomes with each contact, and distribution of education material.

The success of these tasks will be measured in the number of meetings between the Director of Education and industry stakeholders, educational materials created, volunteer activities initiated, conferences attended. The success of the program will be visible in the number of distribution points for educational material and the number of operational changes within marine-debris related industries. Below is a summary of the input and output indicators and success indicators for the implementation of the Education and Outreach Program. Further details of the performance measurement system are provided in Appendix E. (p. 50)

Input and Output Indicators	Success Indicators
<ul style="list-style-type: none"> • Staff time and budgetary spending • Number of meetings between Director of Education and stakeholders • Number of educational materials created • Number of volunteer activities initiated • Number of conferences attended 	<ul style="list-style-type: none"> • Number of distribution points for educational material • Number of industry operational changes

6.4 Subsequent Years

The Education and Outreach Program will continue to grow and expand over subsequent years, continually nurturing the contacts made with other agencies and organizations during Year One. Additionally, the program will implement the marine debris educational curriculum that will be developed in Year One and will also organize volunteer initiatives such as beach clean-up events.

7. MAPPING & RESEARCH

The Mapping and Research Initiative will focus on assessing the current state of marine debris, in particular the point sources, circulation patterns, and areas of greatest impact. Currently, there is a dearth of information regarding marine debris, and therefore this initiative is crucial to expanding our understanding and our management of the problem. As this initiative will be funded primarily through the Grant Program, the Mapping and Research Initiative's Year One tasks will be to determine what information currently exists and to provide recommendations for research projects to be carried out in subsequent years of the program.

7.1 Goals

First year goals for this initiative include consolidating existing information on what has and has not been mapped and developing a report that will communicate this information to the Senior and Junior Policy Analysts and contribute to the Report to Congress. This internal report will also set priorities for subsequent years of the initiative.

7.2 Implementation

The Mapping and Research Initiative will be housed in the National Ocean Service line office. For the initial phase of the Mapping and Research Initiative, an expert in the field of ocean mapping will be hired to create a report covering all areas specifically relevant to the origin, locations and projected movement of marine debris that have been mapped, as well as areas which need to be mapped. The Mapping Expert will be contracted by March 1, 2006. The report produced by the Mapping Expert will be submitted to the Policy Analysts to be incorporated into the larger Report to Congress. The Mapping Expert will provide recommendations for this program, which will be used in the development of the work plan of the Mapping and Research Initiative for Year Two. The Matrix Manager will play a crucial role in facilitating communication between the Mapping Expert and the Report Team.

The program budget allocates \$338,000 to the Mapping and Research Initiative. This includes the annual salary of the Mapping Expert, which is \$120,000, and other than personnel expenses such as rent, travel, and supplies. See Appendices C (p. 37) and D (p. 45) for more information on the Mapping Expert and the budget breakdown.

Implementation

Goals:

- Gather baseline information on existing studies of marine debris sources and potential mapping tools
- Lay framework for future research projects under the Mapping Initiative
- Produce mapping report for Matrix Manager and Report Team (July 31, 2006)

Key Staff:

- Mapping Expert (contracted March 1 - July 31, 2006)

Overall Budget: \$338,000

Line Office: National Ocean Service

7.3 Performance Measurement

Every month the Mapping Expert will produce a progress report and submit it to the Matrix Manager and the Report Team. The Mapping Expert must meet two internal deadlines for draft report submissions. Both the Matrix Manager and the Program Manager are responsible for submitting the mapping report to the Report Team by July 31, 2006. The managers will also ensure coordination between the Mapping Initiative, the Fishing Gear Initiative and the Grant Program.

To measure the success of these initiatives within Year One, staff time and budgetary spending will be monitored. In addition, the timeliness of submission of internal draft and of the Final submission to the Report to Congress team will be supervised. As such, the development of a work plan for Year Two is another performance measurement. The success of this program is contingent upon fulfillment of the Report to Congress as the report will lay the groundwork for Year Two. Below is a summary of the input and output indicators and success indicators for the implementation of the Mapping and Research Initiative. Further details of the performance measurement system are provided in Appendix E. (p. 50)

Input and Output Indicators	Success Indicators
<ul style="list-style-type: none">• Staff time and budgetary spending• Partnerships with other Federal agencies• Timely submission of various drafts of mapping section of Report to Congress• Final submission of report section• Development of work plan for Year Two	<ul style="list-style-type: none">• Fulfills requirements of Report to Congress• Lays a solid groundwork for Year Two

7.4 Subsequent Years

While some mapping techniques will be required for input into the Report to Congress, this initiative will not be fully implemented until Year Two, as the Report to Congress will identify priority areas for further research and the Grant Program will provide a funding basis for this initiative. A Director of Marine Debris Research will be hired at the start of Year Two in order to assure that the Mapping and Research Initiative effectively implements the priorities established by the Committee and that research grants awarded under the Grant Program produce the intended results, a Director of Marine Debris Research will be hired at the start of Year Two.

8. FISHING GEAR

The Act requires NOAA improve efforts to prevent and reduce the loss of fishing gear and attempt to reduce the adverse impacts of derelict fishing gear on the marine environment and navigational safety. According to these goals, the Fishing Gear Initiative must work towards developing alternatives to current fishing gear. Additionally, in conjunction with the MDP Education and Outreach Program, the Fishing Gear Initiative will organize voluntary and mandatory programs for fishing industries that are designed to prevent the loss of fishing gear.

8.1 Goals

This initiative focuses on collecting baseline information on current fishing gear and potential alternatives, as well as developing a report highlighting this research.

8.2 Implementation

The Fishing Gear Initiative will be housed within the National Ocean Service line office. In order to ensure that the goals for Year One are completed in a timely manner, an expert in the field of fishing gear and innovative fishing gear technologies will be contracted by March 1, 2006. The Fishing Gear Expert will create a report covering all areas specifically relevant to the research and development of current fishing gear alternatives and technologies that will aid in tracking, recovery and identification of lost or discarded fishing gear. The report will include an outline of strategies to develop voluntary or mandatory measures to reduce the loss and discard of fishing gear, as well as to aid in its recovery, including, but not limited to, incentive programs, reporting programs, hotlines, computer-based notification forms, and observer programs. The Fishing Gear Expert will submit this report to the Policy Analysts, who will in turn incorporate it into the larger Report to Congress. The Matrix Manager will play a crucial role in facilitating communication between the Fishing Gear Expert and the Report Team.

LukeReilly Consulting has allocated \$287,000 for Year One in order to accommodate the salary of the Fishing Gear Expert in addition to the estimated cost of office space, travel, supplies, and fishing materials. See Appendices C (p. 37) and D (p. 50) for more information on the Fishing Gear Expert and the budget breakdown.

Implementation
<p>Goals:</p> <ul style="list-style-type: none">• Gather baseline information on current fishing gear and potential alternatives• Lay framework for future research projects under the Fishing Gear Initiative• Produce a fishing gear report for Matrix Manager and Report Team (July 31, 2006) <p>Key Staff:</p> <ul style="list-style-type: none">• Fishing Gear Expert (contracted March 1 - July 31, 2006) <p>Overall Budget: \$287,000</p> <p>Line Office: National Ocean Service</p>

8.3 Performance Measurement

The Fishing Gear Expert will produce monthly progress reports to the Matrix Manager and the Report Team. Additionally, the Fishing Gear Expert must meet two internal deadlines for draft report submissions to the Policy Analysts. Both the Matrix Manager and the Program Manager are responsible ensuring that the mapping report is submitted to the Report Team by July 31, 2006. The initiative's output will be measured by amount and quality of partnerships made with other federal agencies. Timely submission of internal draft and of the final report section for the Report to Congress will be an indicator as well. The success of this initiative in Year One will be measured by adequate fulfillment of the Report to Congress guidelines and the efficacy of the

framework it creates for Year Two endeavors. Below is a summary of the input and output indicators and success indicators for the implementation of the Fishing Gear Initiative. Further details of the performance measurement system are provided in Appendix E. (p. 50)

Input and Output Indicators	Success Indicators
<ul style="list-style-type: none"> • Staff time and budgetary spending • Partnerships with other Federal agencies • Timely submission of various drafts of fishing gear section of report • Final submission of report section • Development of work plan for Year Two 	<ul style="list-style-type: none"> • Fulfills requirements of Report to Congress • Lays a solid groundwork for Year Two

8.4 Subsequent Years

The Fishing Gear Initiative will be fully implemented in Year Two, once the Report to Congress is complete and priority areas for further research are established. The Grant Program will provide the basis of funding for this initiative. These grants will fund projects seeking to reduce the threats that fishing gear poses to the marine environment and promote tracking, recovery, and identification of lost and discarded gear. In order to assure that the Fishing Gear Initiative effectively implements the priorities established by the Committee and that research grants awarded under the program produce the intended results, a Director of Fishing Gear Alternatives will be hired at the start of Year Two.

9. CLEARINGHOUSE

The Act requires that NOAA, in coordination with the Committee, establish and maintain a Federal Information Clearinghouse. This clearinghouse aims to improve the dissemination of information to researchers and other interested parties, both domestically and internationally. This improved information sharing is crucial for both the growth of the marine debris research field and the coordination of projects aimed at reducing and preventing marine debris. This clearinghouse will include standardized protocols to map locations of commercial fishing and aquaculture activities using Geographic Information System (GIS) techniques. Additionally, the database will provide information on fishing gear and equipment, fishing gear practices, and guidance on the identification of types of fishing gear fragments.

9.1 Goals

The Year One activities will be to gather and organize all current marine debris information for incorporation into a database to be developed at the beginning of Year Two. This work will be done in collaboration with the rest of the MDP staff, particularly the Program and Matrix Manager, the Mapping Expert, and the Fishing Gear Expert.

9.2 Implementation

The Year One activities for the Information Clearinghouse will be housed within the National Ocean Service. A Data Specialist will be contracted by April 1, 2006. S/he will be responsible for

collecting, cleaning, and collating existing relevant marine debris information. The Data Specialist will also create a report outlining what data s/he has collected, how the information is organized, and specific guidelines for the development of the Information Clearinghouse.

LukeReilly Consulting has allocated \$171,000 for Year One in order to accommodate the salary of the Data Specialist in addition to the estimated cost of office space, travel, supplies, and database services. See Appendix D (p. 45) for a detailed outline of the budget.

Implementation
<p>Goals:</p> <ul style="list-style-type: none"> • Collect, clean, and organize relevant marine debris data • Coordinate database formatting, content, and capacity requirements with National Ocean Service database portal designers <p>Key Staff:</p> <ul style="list-style-type: none"> • Data Specialist (contracted April 1 - September 30, 2006) <p>Overall Budget: \$171,000</p> <p>Line Office: National Ocean Service</p>

9.3 Performance Measurement

The success of this initiative in Year One will be based on the ease of incorporating the clearinghouse into NOAA's existing information system. It will also be based upon the quality and quantity of the baseline data that will be entered into the database. As such, the performance of the Information Clearinghouse endeavor will be gauged by the amount of time the Data Specialist spends with others researchers within NOAA and the number of meetings with relevant stakeholders, the amount of data that is collected, and the breadth and relevance of that information.

Input and Output Indicators	Success Indicators
<ul style="list-style-type: none"> • Staff time and budgetary spending • Number of meetings with relevant stakeholders 	<ul style="list-style-type: none"> • Ease of incorporation of the Clearinghouse into NOAA's current information system • Quality and quantity of baseline data gathered

9.4 Subsequent Years

In the beginning of Year Two, the Information Clearinghouse will be incorporated into NOAA's existing information database system. Further expansion of the Information Clearinghouse may include linkages to international portals such as the United Nations Environment Program and the Global Programme of Action for the Protection of the Marine Environment from Land Based Activities. This database will be continuously updated as relevant information regarding marine debris is collected.

10. CONCLUSION

Marine debris is a far-reaching problem that is both international in scope and requires innovative solutions to mitigate. The Marine Debris Research, Prevention and Reduction Act is a significant step towards addressing this problem because it acknowledges the lack of research in the field and also seeks to jumpstart international cooperation on this issue. The program articulated in this report presents the state of the art in environmental public management. First, there is the concept of interagency policy making as embodied by the NOAA/Interagency Marine Debris Committee nexus. No less important is the incentive to public-private grant funding embodied in the vigorous outreach activities. Third, the concept of matrix management allows NOAA's scientists to concentrate on their scientific research while environmental public managers apply their process-oriented skills to program administration. Finally, the Program dedicates an entire year's worth of resources to developing a strategic plan for future action. These, as well as many other processes and devices embedded in the program design, provide NOAA with the tools and flexibility to lead the way on this important crusade. With the arrival of the Report to Congress, there will come the detailed schematic plan for subsequent years of the MDP. By October 2006, when the Intergovernmental Review of the Global Program of Action on Land-Based Sources of Pollution Marine Debris meets in Beijing, the international aspects of the plan will be made readily available to our global partners.

The Marine Debris Program is designed to produce the first comprehensive, global plan of action against the creation, deposition, and accumulation of debris in the world's oceans. The Year One activities, staffing, and organization presented herein will set up the process, but cannot provide all of the answers. The work of refining, expanding, and defining the plan will begin in earnest once the Program's grant making, education, and outreach elements are underway, at which time the plan will develop dynamically and heuristically. This is the pattern of all great environmental movements: recognition of the problem, identification of the problem's sources, interdisciplinary analysis of alternative remedies, and finally mobilization. We are now in the analytical stages of the marine debris movement, with a commitment from the United States Congress to support eventual mobilization. For the oceans, for the creatures who make the ocean their home, and for the rest of us who depend on the oceans to modulate our existence on this shrinking planet, nothing could be more hope inspiring.

11. REFERENCES

Agency for Toxic Substances and Disease Registry. 1990. The Public Health Implications of Medical Waste: A Report to Congress. U.S. Department of Health and Human Services, PB91-100271.

Algalita Marine Research Foundation. "Plastic Debris Rivers to Sea Project." Available at: <http://www.plasticdebris.org/> (last accessed November 28, 2005).

Curlee, R. and S. Das. 1991. Plastic wastes: management, control, recycling, and disposal. U.S. Environmental Protection Agency: Washington, D.C.

Gregory, M.R. 1996. Plastic "scrubbers" in hand cleansers: a further (and minor) source for marine pollution identified. *Marine Pollution Bulletin* 32.

International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, London, 1972 [London Convention (LDC)] (26 UST 2403).

Kulkov, Yevgeny. "Vessel attempts to tow away Russian Sub" August 5, 2005. <http://in.rediff.com/news/2005/aug/05sub.htm> (last accessed November 28, 2005).

Laist, D.W. 1996. Impacts of Marine Debris: Entanglement of marine life in marine debris including a comprehensive list of species with entanglement and ingestion records. In J.M. Coe and D.R. Rogers (eds), *Marine Debris: Sources, Impacts and Solutions*. Springer-Verlag: New York, 99-139.

Laist, D.W. and M. Liffman. 2005. *Impacts of Marine Debris: Research and Management Needs*. National Oceanic and Atmospheric Administration.

Library of Congress. 2005. Marine Debris Research, Prevention and Reduction Act S.362. THOMAS, Legislative Information on the Internet. <http://thomas.loc.gov/> (November 26, 2005).

Marine Debris Research, Prevention, and Reduction Act. 2005. <http://www.govtrack.us/congress/bill.xpd?bill=s109-362> (last accessed November 26, 2005).

Maso, M., E. Garces, F. Pages, and J. Camp. 2003. Drifting plastic debris as a potential vector for dispersing Harmful Algal Bloom (HAB) species. *Scientia Marina* 67(1).

Moore, Charles. November 2003. Trashed. *Natural History Magazine*.

NOAA's National Ocean Service. 2005. <http://oceanservice.noaa.gov/about/welcome.html>, (last accessed November 26, 2005).

NOAA Acquisition and Grants Office. <http://www.ago.noaa.gov/> (last accessed October 19, 2005).

Shomura, R.S. and H. O. Yoshida. 1985. Proceedings of the Workshop on the Fate and Impact of Marine Debris 27-29 November 1984. National Oceanic and Atmospheric Administration.

Thompson, R.C., Y. Olsen, R.P. Mitchel, A. Davis, S.J. Rowland, A. John, D. McGonigle, and A.E. Russel. 2004. "Lost at Sea: Where Is All the Plastic?" Science 304 (5672).

U.S. Bureau of Labor Statistics and U.S. Bureau of Economic Analysis. <http://noepdata.csumb.edu/market/oceanEcon.asp> (last accessed December 4, 2005).

U.S. Ocean Conservancy and U.S. Environmental Protection Agency. 1993. Marine Debris Pocket Guide. <http://sacoast.uwc.ac.za/education/resources/marinedebris/index.htm>, (December 4, 2005).

U.S. Commission on Ocean Policy. 2004. An Ocean Blueprint for the 21st Century. <http://ocean.ceq.gov/> (last accessed September 17, 2005).

U.S. Environmental Protection Agency. 2002. Assessing and Monitoring Floatable Debris.

Washington Declaration on Protection of the Marine Environment from Land-Based Activities. November 1, 1995, http://www.gpa.unep.org/documents/gpa/wadeclaration/washington_declaration.pdf (last accessed December 4, 2005).

APPENDIX A: PROBLEM OF MARINE DEBRIS

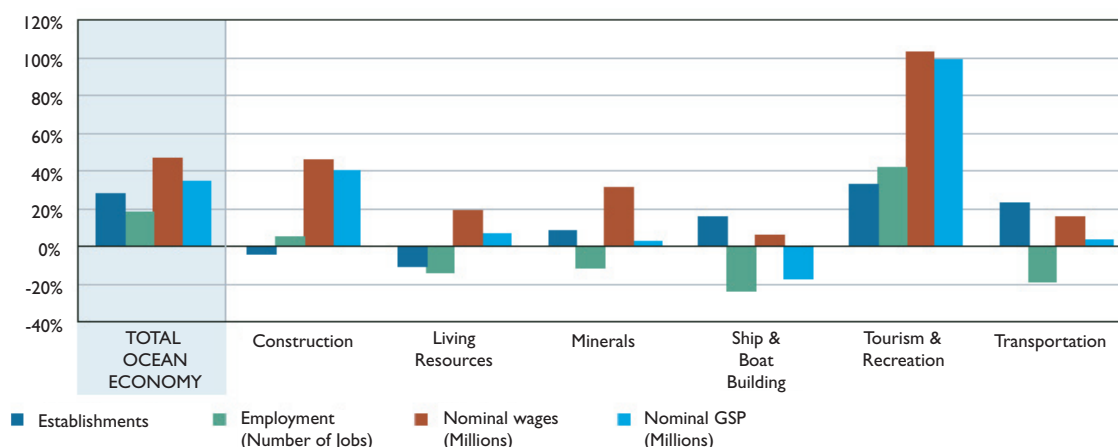


Table A1 – Changes in U.S. Ocean Economy 1990-2000

(Source: Bureau of Labor Statistics, Bureau of Economic Analysis; Chart: US Ocean Commission, 2004)

Related Treaties, Conventions, Protocols, Declarations, and Laws

International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, London, 1972 [London Convention (LDC)] (26 UST 2403)

Prohibits dumping plastics and other persistent synthetic material into the oceans, which may float or remain in suspension so as to materially interfere with uses of the ocean. Excludes wastes disposed during normal vessel operations, which instead are regulated by MARPOL Annex V.

Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 (Ocean Dumping Act), amended in 1988 [Ocean Dumping Ban Act (ODBA)] (33 USC 1401 et seq.)

Prohibits the transport of material for the purpose of ocean dumping unless authorized by permit. Implements the London Convention. Prohibits the ocean disposal of sewage sludge and industrial wastes, and ocean disposal of potentially infectious medical wastes.

Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships, 1973-1978 (MARPOL 73/78) (17 ILM 546, 1978)

Applies to ship-generated wastes. Annex V restricts the at-sea disposal of garbage, and prohibits the at-sea disposal of plastic materials. Requires adequate port waste-reception facilities. Entered into force in the United States on December 31, 1988, but Canada is not a party.

Act to Prevent Pollution from Ships (APPS) of 1982 (33 USC 1901 et seq.)

Regulates disposal of wastes, including oil or other hazardous substances, generated during normal operation of vessels. Implements MARPOL 73/78 legislation, and was amended in 1987 by MPPRCA to implement MARPOL Annex V specifically.

Marine Plastic Pollution Research and Control Act (MPPRCA) of 1987 (PL 100-220)

Implements MARPOL Annex V by amending APPS. Calls for federal agency Reports to Congress on methods to reduce plastic pollution and effects of plastics on the aquatic environment. Requires Coast Guard regulation of overboard disposal of plastics and other garbage under MARPOL Annex V. Calls for Citizen Pollution Patrols joint responsibility of NOAA, Coast Guard, and EPA and public outreach and citizen awards for reported violations. Requires adequate port waste-reception facilities, and vessels 26 ft. in length or greater to display placards, and vessels 40 ft. in length or greater to provide waste management plans. Subtitle B requires EPA to study methods for reducing plastic pollution and requires the Department of Commerce to determine the effects of plastics on the aquatic environment.

Washington Declaration on Protection of the Marine Environment from Land-Based Activities (1996) (26 EP&L 37 et seq.)

A nonbinding international declaration that calls on nations to reduce land-based sources of pollution, including littering. Objectives include: the reduction of litter reaching the marine and coastal environments and the establishment of facilities for the disposal of litter in coastal environments. Encourages international, regional, and national-level activities including: (1) the implementation of regulatory measures or economic instruments to reduce solid waste generation; (2) local management and planning to avoid siting waste dumps near coastlines or waterways; (3) formulation and implementation of awareness and education campaigns; (4) participation in an international clearinghouse and exchange of information; among other things.

Federal Water Pollution Control Act (FWPCA) of 1972, as amended [Clean Water Act (CWA) (33 USC 1251, 1262, 1311 et seq.)

Establishes permitting and pollution control requirements for point source [including publicly owned treatment works (POTW), combined sewer overflows (CSO), and storm drains] for discharges into waters of the U.S. and the oceans. Establishes the NPDES permit program to control such discharges.

Marine Mammal Protection Act (MMPA) of 1972 (16 USC 1361 et seq.)

Places a moratorium on the taking and importing of aquatic mammals and aquatic mammal products from U.S. waters for any purpose other than scientific research or public display. Establishes the Marine Mammal Commission (MMC), which recommends protection and conservation policies on marine mammals for federal agencies.

Endangered Species Act of 1973 (ESA), as amended (16 USC 1531 et seq.)

Intended to conserve endangered and threatened species and protect the ecosystems in which they live. It calls for all necessary measures to improve condition of species so they can be delisted, and to support international treaties for the protection of wildlife and habitat. Among other things, it requires the listing of threatened and endangered species, designation of critical habitat of listed species, development of recovery plans, and provides for enforcement actions.

Resource Conservation and Recovery Act of 1976 (RCRA) (42 USC 6901 et seq.)

Amends the Solid Waste Disposal Act to better address the disposal of municipal and industrial wastes. Includes provisions to regulate the disposal of hazardous wastes by establishing a “cradle to grave” program. The goals set by RCRA are to: protect human health and the environment; reduce waste and conserve energy and natural resources; and reduce or eliminate the generation of hazardous waste as expeditiously as possible.

Medical Waste Tracking Act of 1988 (Subtitle J of RCRA; 42 USC 6992 et seq.)

Regulates generators and handlers of wastes and requires standards for separating, labeling, packaging, and tracking of certain types of medical wastes. EPA established a demonstration project in several states for the purpose of tracking medical wastes from generation through disposal.

The U.S. Public Vessel Medical Waste And-Dumping Act of 1988 (PL 100-699 Sections 3101-3105)

Requires that all public vessels have a management plan for medical wastes on board ship and prohibits the disposal of these wastes at sea except during national emergencies.

An Act to Study, Control, and Reduce the Pollution of Aquatic Environments from Plastic Materials and For Other Purposes of 1987 (Degradable Plastic Ring Carrier Law) (P.L. 100-556)

Directs EPA to develop regulations that require plastic ring carriers to be made of degradable materials. Many states have already enacted similar laws.

Driftnet Impact Monitoring, Assessment, and Control Act of 1987 (P.L. 100-220, Title IV)

Requires the study and creation of a driftnet marking, registry, and identification system. Directs the Secretary of Commerce to collect information on the numbers of U.S. marine resources killed, retrieved, discarded, or lost by foreign driftnet fishing vessels operating beyond the EEZ of any nation, to evaluate alternative driftnet materials that hasten decomposition of the netting, and evaluate the feasibility of a driftnet bounty system.

Shore Protection Act (SPA) of 1988 (PL 100-688, Sections 4001-4204)

Establishes a permitting scheme for vessels transporting municipal and commercial waste. Requires waste handlers to minimize the release of municipal or commercial wastes during onloading or offloading to vessels, or during vessel transport.

The National Beach Enhancement Act of 2000 (S 3036IS)

To assure that recreation and other economic benefits are weighted equally with hurricane and storm damage reduction benefits and environmental restoration benefits.

(Source: Environmental Protection Agency (EPA). 1994. *Status of efforts to control aquatic debris*. EPA-842-K-94-002. Washington: Office of Water (August); compiled by LukeReilly Consulting).

APPENDIX B: MASTER CALENDAR

The master calendar as is seen below is based on the Marine Debris Prevention and Removal Program (MDP) developed by LukeReilly Consulting. The master calendar breaks down all activities and the timeframe necessary for completion of the MDP Year One goals. Again, the first fiscal year of the MDP goes from October 1, 2005 to September 30, 2006. The Report to Congress and the Grant Program are two endeavors mandated to be completed in Year One. Additionally, LukeReilly Consulting recommends implementing the Education and Outreach Program as well in the first year. The Mapping Initiative, Fishing Gear Initiative, and Information Clearinghouse will be initiated during Year One but will not be fully operational until Year Two.

The figure below shows the Master Calendar Overview for each of the six MDP elements. The Report to Congress, the Grant Program, and the Education and Outreach Program all begin in December 2005 and carry on through September 2006. While the Mapping Initiative, Fishing Gear Initiative, and Information Clearinghouse (to be completed in Year Two) will begin in February and end roughly between July and September.

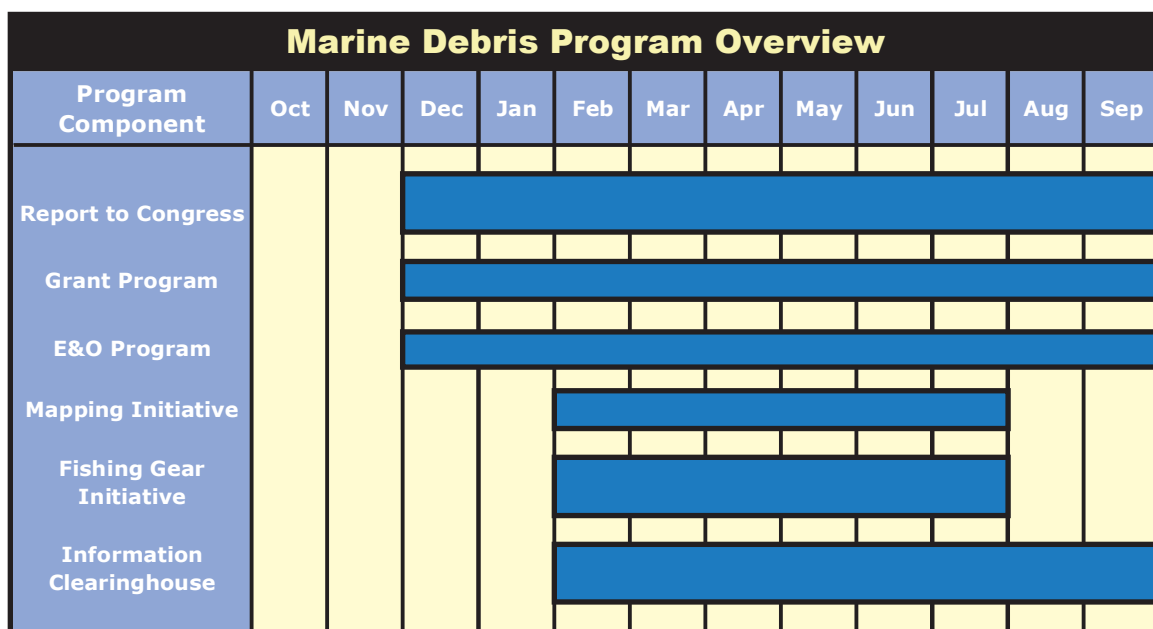


Figure B1: Master Calendar Overview

The next six figures breakdown the task items and dealines within each of the program elements

Figure B2 summarizes the timeline of the various tasks for the Report to Congress. The MDP will hire a report team by January 31. Meetings and briefings are required both increase collaboration and ensure the timely submission of the various components. The Report Team must complete an outline by February 27, and they must submit the various drafts on May 30, July 31, August 30, and September 15. The final Report is due to Congress by September 29.

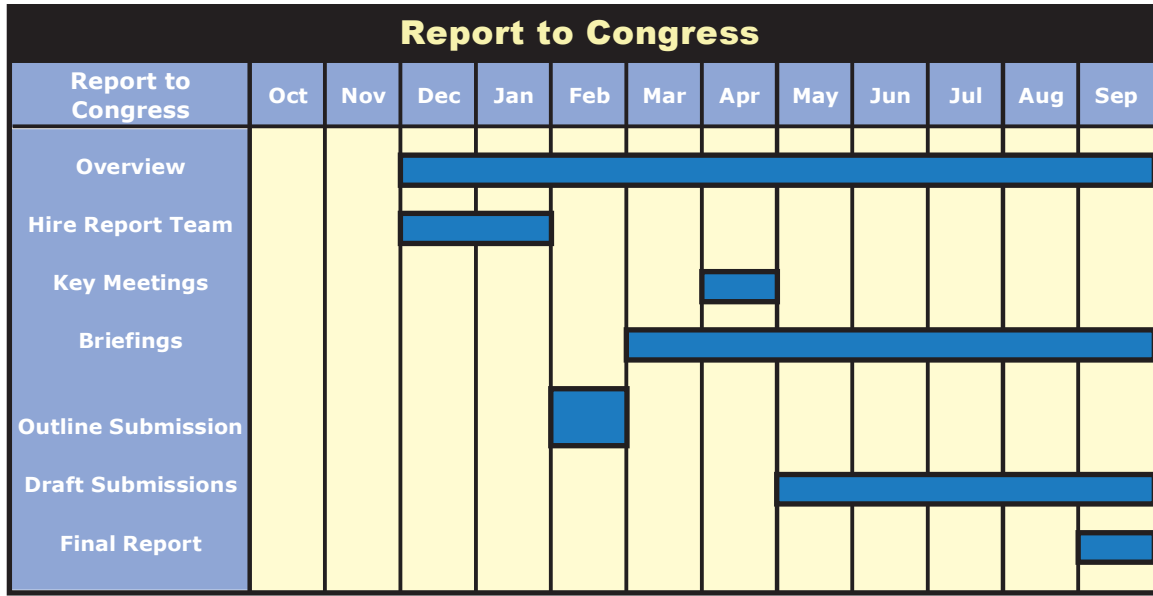


Figure B2: Report to Congress

Figure B3 shows the internal elements and deadlines of the Grant Program. The first priority of this task is to hire the Grant Team by January 31. Internal deadlines include weekly progress reports, a draft of the grant guidelines, stakeholder and partnership contacts and meetings, consultation with the Committee, and a final briefing to the Program and Matrix Manager. The Grant Team must finalize and disseminate the grant guidelines by March 31.

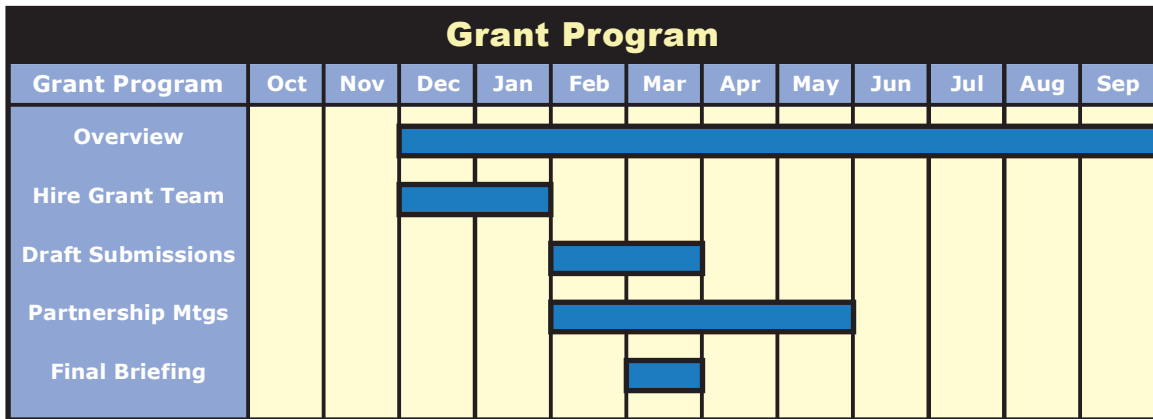


Figure B3: Grant Program

Figure B4 delineates the internal elements of the Education and Outreach Program. The program requires the hiring of a Director of Education and an Education and Outreach Program Assistant by January 31 and March 1, respectively. Within the first year, the Education and Outreach Program must evaluate existing education programs, meet with potential partners, build an educational curriculum, and initiate volunteer activities.

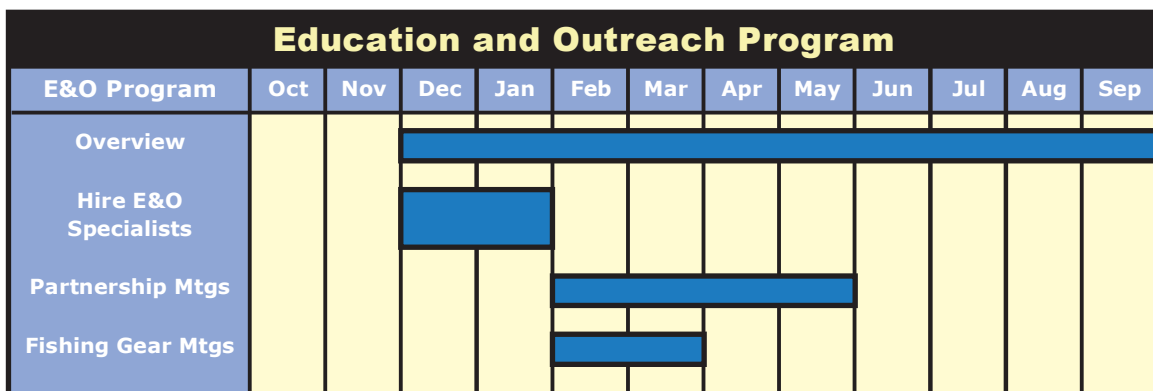


Figure B4: Education and Outreach Program

Figure B5 shows the internal elements and deadlines for the Mapping and Research Initiative. The initiative requires that the MDP hire a Mapping Expert by March 1. The Mapping Expert must create a report highlighting the origin, location, and projected movement of marine debris, which s/he will submit to the Report Team by July 31. Figure B5 also shows the deadlines for the outline and draft submissions of the report (March 31 and May 31, respectively).

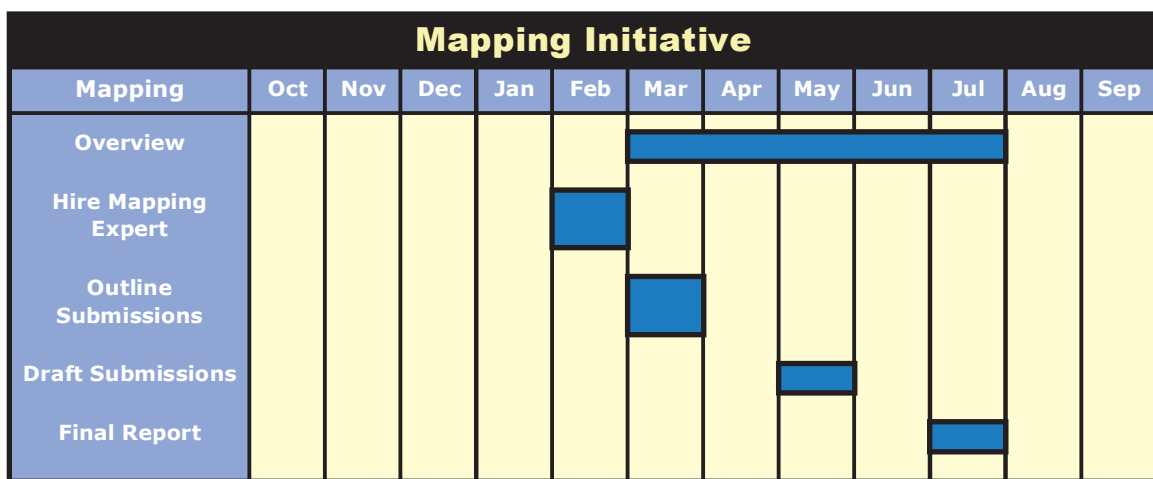


Figure B5: Mapping and Research Initiative

The master calendar for Fishing Gear Initiative (Figure B6) shows the internal deadlines for this initiative. NOAA must hire a Fishing Gear Expert by March 1. The Fishing Gear Expert will create a report covering all areas relevant to research and development of fishing gear technology, potential alternatives, and the tracking, recovery and identification of lost or discarded gear. The Fishing Gear Expert must submit the final report to the Report Team by July 31, and s/he must submit the outline and draft by March 31 and May 31, respectively.

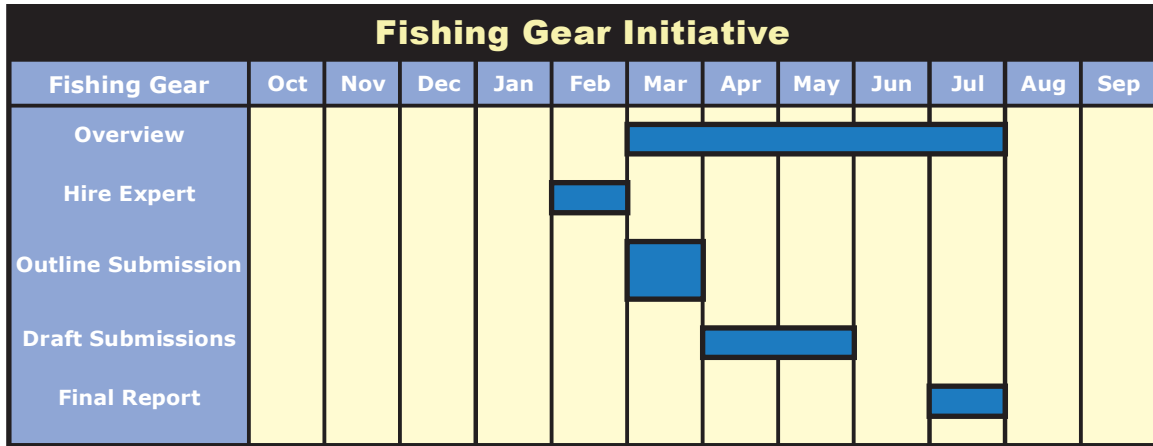


Figure B6: Fishing Gear Initiative

Figure B7 delineates the activities for the Information Clearinghouse in Year One. The Data Specialist, hired by April 1, will examine, collect, and clean existing data on or relating to marine debris. In addition to monthly progress reports, s/he will produce a final report and briefing to the Program and Matrix Managers by September 30.

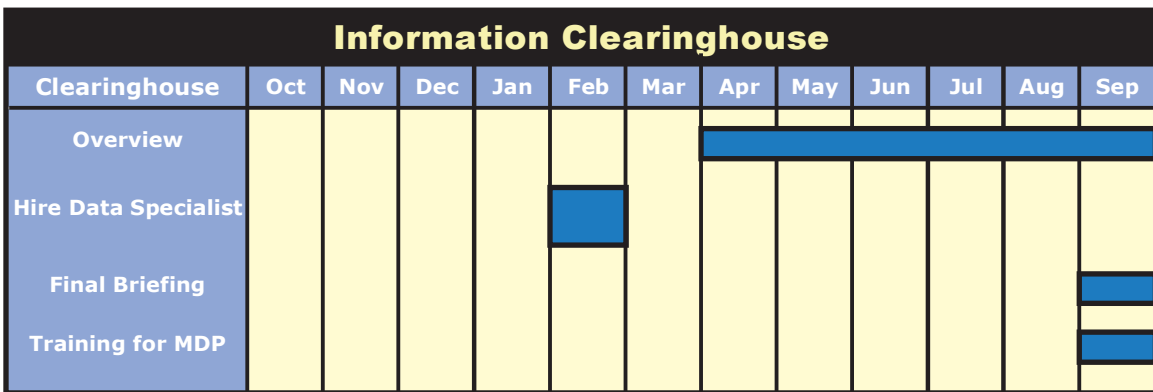


Figure B7: Information Clearinghouse

APPENDIX C: JOB DESCRIPTIONS

Overall Program Management Staffing

Interim Program Manager¹

Oversees entire MDP until the hiring of the Program Manager. This position must be filled by a current NOAA National Ocean Service employee and may become the Program Manager. In addition to the roles set forth in the job description for the Program Manager, the Interim Program Manager will manage, monitor, and direct the Consulting Team (see description under contract), manage the initial office setup and equipment purchase, chair initial and follow-up meetings between Consulting Team and Senior Officials from the Interagency Marine Debris Committee, and oversee the hiring process for full time, permanent MDP staffing. The position is in NOAA's National Ocean Service and reports to the Assistant Administrator of the National Ocean Service.

Grade, Starting Annual Salary, and Range: GS-13/14; \$79,000; to \$115,000

Other Information: Full-time, temporary, new position

Start Date: November 1, 2006

End Date: February 1, 2006

Program Manager

The position serves as director for the implementation of the NOAA MDP created in pursuance of the goals set by the Marine Debris Research, Prevention, and Reduction Act. The position is in NOAA's National Ocean Service and reports to the Assistant Administrator of the National Ocean Service. The incumbent is responsible for the operation of the nation's first strategic marine debris abatement program. A successful applicant encompasses the ability to develop and implement an organizational vision that integrates key national and program goals, priorities, values, and other factors. The Project Manager will primarily manage the MDP's scientific projects and will be instrumental in implementing research and abatement strategies by means of setting grant priorities, overseeing research grant projects, and integrating marine debris data into the developing information portals in the National Ocean Service.

Qualifications: Broad knowledge and extensive experience in the physical sciences, biological sciences, engineering, or mathematics, as related to state-of-the art system development of marine debris assessment techniques. Knowledge or related experience in the area of applications of GIS, mapping, and modeling of ocean currents and debris trajectory, density, and accumulation.

Grade, Starting Annual Salary, and Range: GS-13/14; \$79,000; to \$115,000

Other Information: Full-time, permanent, new position

Start Date: February 1, 2006

End Date: None

¹ All job descriptions contained in this report are compiled from actual job descriptions posted to www.usajobs.com plus original description material by the authors.

Matrix Manager

The employee serves as the MDP Matrix Manager in the NOAA Program Planning and Integration Office. Coordinates process functioning of the MDP. Develops funding plans for the entire MDP. Approves all program expenditures (at some level). Manages MDP cost, schedule, and performance. The position reports to both the Assistant Administrator of the NOAA National Ocean Service and Assistant Administrator of NOAA Program Planning and Integration. Determines who works with whom on the MDP projects, products, or other process flows. Directs MDP related interaction among all of the NOAA line offices, other Federal Agencies, and the Interagency Marine Debris Committee. Oversees preparation and production of MDP Reports to Congress. Serves as coordinator of all Interagency Marine Debris Committee operations. Manages MDP contractual, cooperative, and partnership agreements between NOAA and all extra-mural entities.

Qualifications: Environmental or research management experience leading to particular knowledge, skills, and abilities to successfully perform the duties of the position to be filled. Typically this experience would be from work within this field or a field that is closely related. Prior lab management or a Ph.D. or 3 full years of progressively higher level graduate education leading to such a degree or LL.M., if related.

Grade, Starting Annual Salary, and Range: GS-13/14; \$82,000; to \$114,882

Other Information: Full-time, permanent, new position

Start Date: February 1, 2006

End Date: None

Administrative Support Assistant (2)

This position is located within the National Ocean Service. The incumbent applies specialized knowledge in all administrative functional areas for the MDP office. These areas include budget monitoring, funds and property control, purchasing, contract monitoring, vehicle use and maintenance, travel, time and attendance, and personnel actions. Serves as liaison between with Program Manager, the Matrix Manager, and all other line office managers. As office manager, establishes and maintains filing and routing of office records, forms, correspondence and mail in accordance with established guidelines. Assures accurate and prompt customer assistance and referral. Maintains appointments and office calendar. Composes non-technical correspondence and prepares letters, reports and other documents. Provides data collection, data entry, and data analysis support to various projects. Applies knowledge of organization and mission to refer customers and assist in providing readily available marine debris information. During the first year of service, 50 percent of the ASAs time will be devoted to providing services described herein and the other 50 percent to the Report to Congress Team (lead by the Senior Policy Analyst). For subsequent years, the ASA will revert to 100 percent of time to the services described herein.

Qualifications: One year of specialized experience equivalent to the GS-6 level in the Federal service that is directly related to the duties described under the preceding paragraph. This experience must have equipped the applicant with the particular knowledge, skills, and abilities to perform the duties of the position and must have been equivalent to at least the next lower grade level in the Federal service. This is progressively responsible experience as the principal admin-

istrative assistant to a management level official or comparably positioned person, consisting of a wide variety of administrative support functions that require independent decision-making. Experience must be significant, non-routine and in varied functional areas of the office that include procurement, secretarial functions, and office automation.

Grade and Starting Annual Salary: GS-07/07; \$45,000

Other Information: Full-time, permanent, new position

Start Date: February 8, 2006

End Date: None

Report to Congress Staffing

Senior Policy Analyst

Reviews, evaluates, formulates, and coordinates agency-wide policies and practices in support of marine debris research, prevention, and reduction. The position is responsible for identifying future national-level requirements for marine debris research, prevention, and reduction and developing plans and recommending programs and policies to respond to those requirements. Is responsible for production of a comprehensive Report to Congress on these matters by September 29, 2006. The incumbent will serve as the MDP policy and planning authority and expert advisor to top managers and outside officials. S/he will research, develop, and recommend new policy options on science, resource management, and administrative operations issues. This includes the conduct of original and secondary research; development of draft policy options and positions, vetting, and coordination of policy options within NOAA Oceanic and Atmospheric Research, NOAA National Ocean Service, NOAA National Marine Fisheries Service, and external stakeholders. The incumbent will track and resolve policy issues affecting the MDP to help coordinate policy efforts of multiple offices. The position is responsible for identifying future national-level requirements for marine debris research, prevention, and reduction and developing plans and recommending programs and policies to respond to those requirements. The position may be filled from within existing NOAA staff or extramurally and at the discretion of the Program and Matrix Managers be retained in subsequent years on a part time basis to prepare annual reports.

Qualifications: Experience that has equipped the applicant with the particular knowledge, skills, and abilities to successfully perform tasks associated with reviewing, evaluating, formulating, and coordinating agency-wide policies and practices in support of marine debris related activities. Desired skills include identifying and integrating key issues affecting the organization, including political, economic, social, technological, and administrative factors; understanding the roles and relationships of the components of the national policy making and implementation process, including the President, political appointees, Congress, the judiciary, state and local governments, and interest groups; and formulating effective strategies to balance those interests consistent with the business of the organization.

Grade and Annual Salary: ZA-04/04; \$114,882

Other Information: Full-time, temporary, new position

Start Date: February 1, 2006

End Date: September 30, 2006

Junior Policy Analyst

Assists the Senior Policy Analyst with all of the functions described in the Senior Policy Analyst duties description. Makes recommendations for establishing priorities and deadlines among actions on administrative matters required by various services in each MDP initiative. The position may be filled from within existing NOAA staff or extramurally and at the discretion of the Program and Matrix Managers may be retained in subsequent years on a part time basis to prepare annual reports.

Qualifications: M.A. in Environmental Science and Policy or an equivalent degree.

Grade and Annual Salary: GS-09 / 11; \$55,500

Other Information: Full-time, temporary, new position

Start Date: February 1, 2006

End Date: September 30, 2006

Administrative Support Assistant (2)

Shared with overall program management, see above.

Director of Development

See under Grant Program Staffing for description.

Grant Program Staffing

Grants Manager

This position is a Grant Management Specialist position located in the Grants Division of NOAA's Acquisition and Grants Office. The incumbent of this position assists in the business management and program planning aspects of MDP grants and cooperative agreements. Also collaborates in the formulation of MDP policies and procedures relating to the management of grant and cooperative agreement programs. The incumbent of this position assists in the business management and program planning aspects of the assigned grants and cooperative agreements. S/he provides advice to program staff and to applicants/grantees on administrative and business management issues; conducts administrative and financial review of grant applications and applicant organizations; works with the program in the planning, evaluation and execution of the management aspects of grants and cooperative agreements; is responsible for evaluating grant and cooperative agreement applications to ascertain the reasonableness, and consistency of recommended costs; participates with programs in the negotiation of the budget, award period, and terms and conditions for grant awards; responsible for evaluating budget requests and justifications, performing financial evaluations, including cost analysis and review of grantee organization accounting systems; and attends peer review, project, and administrative site and staff visits to applicant and grantee organizations to assist in the evaluation of the appropriateness of budgetary requests, in order to provide technical assistance, and to assist in the resolution of issues related to an application or award. Also responsible for integrating all grant projects into NOAA's Grants On Line web site and other Federal grant opportunities web sites. Together with the MDP Director of Development pursues private sector matching grant funding opportunities.

Qualifications:

Must have one year of specialized experience, equivalent to the next lower grade level, that has given you the particular knowledge, skills, and abilities required to successfully perform the duties of the position. Typically, we would find this experience in work within this field or a field that is closely related.

Grade, Starting Annual Salary and Range: GS-12/13, \$80,000; to \$97,000

Other Information: Full-Time, Permanent

Start Date: February 1, 2006

End Date: None

Grant Assistant

Assists the Grant Manager with all of the functions described in the Grant Manager Description. The position may be filled from within existing NOAA staff or extramurally.

Qualifications: B.A. or B.S. in Business Administration or an equivalent degree.

Grade and Annual Salary: GS-09/11; \$45,500

Other Information: Full-time, temporary

Start Date: February 1, 2006

End Date: September 30, 2006

Director of Development

This position is located in the NOAA Program Planning and Integration Line Office. This position is supervised by the MDP Matrix Manager and serves the Grant Program within the MDP. Performs as extramural developer of public-private partnership building for all sub-programs within the MDP. These sub programs include the Mapping and Research Initiative, the Fishing Gear Initiative, the Federal Clearinghouse, and Education and Outreach Program. Duties include developing a list of potential marine debris stakeholders, networking with these stakeholders, and securing commitments to participate as matching grant funders. These duties may include developing appropriate matching grant priorities in conjunction with Program and Matrix Managers and extramural stakeholders such that the Grant Manager may begin to create guidelines and requests for proposals. The position entails substantial travel around the United States to meet with stakeholders. During the first year of service, the Director of Development will spend 50 percent of his/her time assisting the Report to Congress Team in creating strategic matching grant priorities for inclusion in the Report to Congress.

Qualifications: Experience that has equipped the applicant with the particular knowledge, skills, and abilities to successfully perform tasks associated with reviewing, evaluating, formulating, and coordinating fund raising policies and practices in support of marine debris related activities. Desired skills include organizing fund raising events, executing fund raising campaigns, and following up with grantors to secure promised funds.

Grade, Starting Annual Salary and Range: GS-12/13, \$62,850; to \$97,000

Other Information: Full-Time, Permanent

Start Date: February 8, 2006

End Date: None

Education and Outreach Program Staffing

Director of Education

The MDP Director of Education provides executive management over the MDP's educational and outreach requirements. The incumbent will work with the Program and Matrix Managers towards developing, recommending, and supporting the broad missions, goals, and policies of the MDP. This position is responsible for executive leadership and overall effectiveness of the following functions and activities: developing and conducting public information campaigns related to marine debris to inform and educate a variety of audiences, including Congress, students, the media, industry, and consumers. Provides advice to the Program and Matrix Manager, Senior and Junior Policy Analysts, and other key officials on public communications strategies for disseminating information. Directs the preparation of press releases, background speeches, testimony, and other documents in support of MDP initiatives. Providing overall planning and leadership for the development and implementation of the MDP's long-range policy goals through outreach with all constituent groups, including industry, all levels and branches of Government, academia, and consumers. Maintains overall responsibility for planning and coordinating public meetings and conferences, supporting the MDP. Creating initiatives to stimulate matching grant participation by the private sector in MDP projects, including outreach to the industries and other stakeholders whose activities relate to marine debris materials and contamination; managing the web content for all MDP web sites and partner portal sites (except for the Informational Clearinghouse) and ensures compliance with Federal and Departmental (including eGov) Web content and site standards. Provides leadership for managing web content-based tools, such as portals, subscription email services, and interactive help tools. The staff also monitors Web site statistics, follows industry best practices, including usability and accessibility, and monitors the state of the Web to implement and maintain new web technology to ensure customer satisfaction on all sites.

Qualifications: The successful applicant will possess corporate, legislative, and/or government experience demonstrating an ability to lead the Agency's legislative, public affairs, education, internal communications, web site management, and executive management activities. (Provide examples of your experience related to legislative activities, information and public affairs responsibilities, public education activities, and web site management).

Grade, Starting Annual Salary and Range: GS-12/12; \$74,500; to \$84,369

Other Information: Full-Time, Permanent

Start Date: February 1, 2006

End Date: None

Education and Outreach Program Assistant

Assists the Director of Education with all of the functions described in the Director of Education description. The position may be filled from within existing NOAA staff or extramurally.

Qualifications: B.A. or B.S. in Education or an equivalent degree.

Grade and Annual Salary: GS-09 / 11; \$45,500

Other Information: Full-Time, Permanent

Start Date: March 1, 2006

End Date: None

Initiation of Year 2 Program Staffing

Mapping Expert

The Mapping Expert prepares the strategic plan for mapping and research priorities in NOAA's MDP. Duties will include gathering, reviewing, and summarizing all known research and data on marine debris, assessing gaps in this data, making recommendations for research activities to fill these gaps, and compiling all of the above into a report for inclusion in the Report to Congress being prepared by the MDP. The incumbent will need to collaborate with various officials within the MDP including the Program and Matrix Managers, the Grant Manager, the Data Specialist, the Director of Development, and especially the Senior Policy Analyst in order to fully execute the functions of the position. The position may be filled from within existing NOAA staff or extramurally.

Qualifications: Degree: physical science that included 24 semester hours in physical oceanography, or physical science degree plus oceanography research experience. Proven secondary research and report writing skills.

Contract Price: \$70,000

Other Information: Contractual

Start Date: March 1, 2006

End Date: July 31, 2006

Fishing Gear Expert

The Fishing Gear Expert prepares the strategic plan for fishing gear grant funding priorities in NOAA's MDP. Duties will include gathering, reviewing, and summarizing all known research and data on the marine debris aspects of fishing gear, assessing gaps in these data, making recommendations for research activities to fill these gaps, assessing the current status of marine debris reducing fishing techniques and technologies, making recommendations for the future development of marine debris reducing fishing techniques and technologies, and compiling all of the above into a report for inclusion in the Report to Congress being prepared by the MDP. The incumbent will need to collaborate with various officials within the MDP including the Program and Matrix Managers, the Grant Manager, the Data Specialist, the Director of Development, and

especially the Senior Policy Analyst in order to fully execute the functions of the position. The position may be filled from within existing NOAA staff or extramurally.

Qualifications: A degree in marine biology, oceanography or a related field. Knowledge of fishing gear and technologies. Proven secondary research and report writing skills.

Contract Price: \$70,000

Other Information: Contractual

Start Date: March 1, 2006

End Date: July 31, 2006

Data Specialist

The Data Specialist prepares the strategic plan for the Federal Information Clearinghouse in NOAA's MDP. Duties will include analyzing the database requirements for marine debris clearinghouse, analyzing necessary systems and designs for integration of the Information Clearinghouse into the NOAA-wide computer information portal, and making recommendations for the implementation of the Information Clearinghouse based on this analysis. The Data Specialist will also collaborate with the Grant Manager to design a uniform standard data protocol for all grants projects so that these data may be smoothly incorporated into the Information Clearinghouse. The incumbent will need to collaborate with various officials within the MDP including the Program and Matrix Managers and the Grant Manager in order to fully execute the functions of the position. The position may be filled from within existing NOAA staff or extramurally.

Qualifications: A degree in computer sciences with specialized experience in database creation. Proven secondary research and report writing skills.

Contract Price: \$37,917

Other Information: Contractual

Start Date: April 1, 2006

End Date: September 30, 2006

APPENDIX D: LINE ITEM BUDGET

Although Congress has appropriated \$10 million annually for five years to the MDP to fulfill all the program's requirements, only \$2 million dollars were allocated for Year One of the program. This appendix contains a methodology for budget calculations, a line item budget for the overall program administration, and line item budgets for each component of the MDP.

Methodology

The MDP's line item and program budget correlates the funding levels for the fiscal year with the major first-year actions of the plan, based on program start-up costs and organization and staffing requirements. General schedules and senior executive pay scales from the U.S. government salary table were used to determine personnel costs for NOAA employees. Salaries, consulting costs, and benefits were calculated from the prevailing market rates for specialized consultants in Washington, DC who are familiar with the federal government and environmental programs and from existing environmental consulting companies. All employees will be provided a 26% fringe benefit allotment in accordance with standard NOAA federal government pay policies, and consultants will be provided with a 28% fringe benefit allotment. Other overhead costs listed as "Other than Personnel Services" such as rent, travel, and supplies were determined from current estimates of travel costs for federal employees as noted on the General Services Administration website (www.GSA.gov), online travel guides (Expedia.com), and from direct quotes from the NOAA Budget Office.¹ Although these budget projections are based on limited data, they enable the transformation of the goals and objectives of the Act into concrete actions. The MDP's budget serves as a critical starting point for designing a performance management system and master calendar that will guide the management actions specified in the Act.

Program Initiation and Transition Budget

The Interim Program Manager and the consulting team will be hired at the beginning of November and will continue with the MDP for one month after permanent staff is hired. It is estimated that three full-time consultants will be needed for program initiation. Consultant salaries are estimated on a per-hour basis, \$45 for each of the three assistants, with 28% in fringe benefits. Substantial travel will be needed in order to fulfill the outreach directives stated in the Act. This is estimated at \$5,000 per person for the entire period, and reflects five to six three-day trips per person as based on standard travel and federal per-diem reimbursements.² Supplies are estimated at \$500 per person. As the Interim Program Manager is responsible for Program Administration, his/her costs are included in the overall Program Management line item budget. The consulting teams costs are included in the Report to Congress budget as all their duties are focused on initiating this endeavor.

Program Management Budget

During Year One, the MDP Administration staff will work half-time on program administration and half-time on completion of the Report to Congress. All staff will be compensated for 26% fringe benefits, as typical for NOAA. Approximately \$83,000 is required to house these four people including electricity, rent, and phone calls, as quoted by the NOAA Budget Office. This

¹ Sarah Morison, NOAA Budget Office. Personal Communication, October 2005.

² General Services Administration, US Federal Government. www.gsa.gov.

is an aggregate quote for a range of 3-5 people and includes a personal space for each employee and use of the common facilities. Actual costs per person vary on type of building and space type (private or public building; cubicle, enclosed office, etc) but NOAA typically uses this rate when calculating program budgets with new staff.³ Using this aggregate estimate for the three persons here (two full-time and two half-FTEs) is appropriate. Since the Administrative Assistants will be utilized half-time for Program Administration, the rental quote reflects half of their rental cost. The other half will be paid by the Report Team budget. New computers will be purchased for each staff person. Travel is calculated for the two managers to be 7-8 trips during the year, which is two more trips than is averaged for the consulting team. LukeReilly Consulting estimates that the Program Managers will need to meet with constituents more often and will travel more frequently since they will be employed for the full year. This staff will be hired in February and will continue for subsequent years of the MDP. The chart below shows the estimated costs of Program Administration during Year One.

Program Administration				
Personnel Services		% time	Annual Salary	Cost
Interim Program Manager	100%	42%	\$79,000	\$32,917
Matrix Manager	100%	67%	\$82,000	\$54,667
Program Manager	100%	67%	\$79,000	\$52,667
Administrative Assistant	50%	67%	\$45,000	\$15,000
Administrative Assistant	50%	67%	\$45,000	\$15,000
Base Salaries				\$170,250
Fringe Benefits				26% \$44,265
Total Personnel Services				\$214,515
Other Than Personnel Services				
Supplies				\$3,000
Rent/Utilities/Electricity/Phone		83%		\$83,333
Computers				\$6,000
Travel				\$10,000
Total OTPS				\$102,333
Total Program Administration				\$316,848

Report to Congress Budget

Salary allocations and 26% fringe benefits are consistent with NOAA federal pay scales. The Senior Policy Analyst will be compensated at the GS-15 level, and the Junior Policy Analyst will be of grade GS-09/11. The two Administrative Assistants, mentioned in Program Administration, will devote half of their time to the completion of the Report. The Report Team will come together as soon as possible, and considering Federal hiring procedures, LukeReilly Consulting estimates this will be in February. Rent, basic travel, and supplies are included in the Report Budget. Since the Administrative Assistants will be utilized half-time for the Report, the rental quote

³ Sarah Morison, NOAA Budget Office. Personal Communication, October 2005.

reflects half of their rental cost. The other half will be paid by the Program Administration budget. Additional travel for the second Interagency Marine Debris Committee meeting in Hawaii for both Analysts is included in the budget. Estimated printing costs for the report are also included. The Director of Development will be of grade GS-09/12 and is eligible for 26% fringe benefits. The estimated costs of the Report to Congress are in the chart below.

Report to Congress				
Personnel Services		% time	Annual Salary	Cost
Senior Policy Analyst	100%	67%	\$114,882	\$76,588
Junior Policy Analyst	100%	67%	\$55,500	\$37,000
Administrative Assistant	50%	67%	\$45,000	\$15,000
Administrative Assistant	50%	67%	\$45,000	\$15,000
Director of Development	50%	67%	\$62,850	\$20,950
Base Salaries				\$164,538
Fringe Benefits			26%	\$42,780
Total Personnel Services				\$207,318
Other Than Personnel Services				
Consulting Services				\$171,760
Interagency Meetings				\$22,240
Rent/Utilities/Electricity/Phone		83%		\$83,333
Report Printing				\$5,000
Computers				\$7,000
Travel				\$14,000
Supplies				\$2,000
Total OTPS				\$305,333
Total Report to Congress				\$512,651

Grant Program Budget

The Grant Manager will be compensated according to federal grade level GS-12/13 with a 26% fringe benefit. The Grant Assistant will be compensated at a GS-6 Level with a 26% fringe benefit. The Director of Development will be of grade GS-09/12 and is eligible for 26% fringe benefits. Travel, supplies, rent and advertising costs are for all management staff and are based on average estimates. Because both the Grant Manager and Director of Development are required to meet with multiple stakeholders, LukeReilly Consulting has included a generous travel budget which covers transport and per diem reimbursements for the entire year (~\$6,000 per year, as estimated by NOAA).⁴ This travel cost includes multiple trips including conferences, national travel, and trips far from DC, such as to Alaska and Hawaii. Below is a chart showing cost estimates for the development of the Grant Program.

⁴ Sarah Morison, NOAA Budget Office. Personal Communication, October 2005.

Grant Program				
Personnel Services		% time	Annual Salary	Cost
Grant Manager	100%	67%	\$80,000	\$53,333
Grant Assistant	100%	67%	\$45,000	\$30,000
Director of Development	50%	67%	\$62,850	\$20,950
			Base Salaries	\$104,283
			Fringe Benefits	26% \$27,114
			Total Personnel Services	\$131,397
Other Than Personnel Services				
Rent/Utilities/Electricity/Phone		83%		\$55,556
Computers				\$5,000
Travel				\$10,000
Supplies				\$1,000
Advertising				\$5,000
			Total OTPS	\$76,556
			Total Grant Program	\$207,953

Education and Outreach Budget

The Director of Education will be full-time federal government grade GS-12/12 and will be hired beginning in February. The Education and Outreach Program Assistant will be a full-time federal government grade GS-09/11. Office space costs, travel, and supplies are based on NOAA budget quotes and average estimates. Below are the cost estimates for the education and outreach component.

Education and Outreach Program				
Personnel Services		% time	Annual Salary	Cost
Director of Education	100%	67%	\$74,500	\$49,668
Program Assistant	100%	67%	\$45,000	\$30,000
			Base Salaries	\$79,667
			Fringe Benefits	26% \$20,713
			Total Personnel Services	\$100,380
Other Than Personnel Services				
Rent/Utilities/Electricity/Phone		83%		\$50,000
Travel				\$5,000
Supplies				\$1,000
			Total OTPS	\$56,000
			Total Education and Outreach	\$156,380

Initiating Year Two Programs

Total operational costs for year one are estimated to be \$1.2 million dollars. This is \$800,000 below the \$2 million allocated for Year One activities. It is expected that the remaining funds will be used as grant funding to initiate the Act's directives which will be fully implemented in Year Two. These activities include establishing the following: a Mapping and Research Initiative, a Fishing Gear Initiative, and an Information Clearinghouse. Because it will be difficult to fully solicit and award grants to outside parties within the two months between promulgation of grant guidelines and the end of the fiscal year, LukeReilly Consulting recommends the initial grants be internal NOAA grants which will be used to develop the Education and Outreach Program, or to initiate these Year Two endeavors.

Initiation of Year Two Programs				
Personnel Services		% time	Annual Salary	Cost
Data Specialist	100%	58%	\$65,000	\$37,917
Fishing Gear Expert	100%	58%	\$120,00	\$70,000
Mapping Expert	100%	58%	\$120,00	\$70,000
			Base Salaries	\$177,917
			Fringe Benefits	26% \$46,258
			Total Personnel Services	\$224,175
Other Than Personnel Services				
Rent/Utilities/Electricity/Phone		58%		\$58,333
Travel				\$15,000
Supplies				\$1,500
Mapping Equipment				\$227,577
Fishing Materials				\$177,578
Database Services				\$102,005
			Total OTPS	\$581,993
			Total Grant Program	\$806,168

APPENDIX E: PERFORMANCE MEASUREMENT SYSTEM

During the first year of the NOAA Marine Debris Prevention and Removal Program (MDP), three areas will be prioritized: the Report to Congress, the Grant Program, and the Education and Outreach Program. Similarly, during this first year, the groundwork will be laid for the Mapping and Research Initiative, Fishing Gear Initiative, and Information Clearinghouse in preparation for their launch during Year Two.

A performance measurement system is crucial to ensure the efficient and successful completion of Year One assignments. This system developed by LukeReilly Consulting is based on measuring indicators of productivity, collection of this information, reporting said information to management and other appropriate parties, and meaningful feedback from management to employees in order to ensure final products will be completed on time and within the budget.

Program Task 1

Prepare a Report to Congress on the Current State of Marine Debris

Goals

Initial Goal

Meet with Committee members to create report outline, submit outline to the Committee at its first meeting in November 2005, and begin preliminary division of labor for writing the report.

Interim Goals

Collect data and work from Committee members, edit and revise report sections, submit 1st draft to Program and Matrix Managers, revise 1st draft, submit 2nd draft to Managers and the Committee.

Final Goals

Submit final draft of the Report to Congress.

Program	Collection	Reporting	Feedback
Report to Congress	<i>By Whom:</i> Consultants/ Policy Analysts <i>In What Form:</i> Progress Reports <i>Frequency:</i> Monthly / bi-weekly (Mar-May, Jul- Sept)	<i>To Whom:</i> Matrix and Program Managers <i>In What Form:</i> Progress Reports <i>Frequency:</i> Monthly / bi-weekly (Mar-May, Jul- Sept)	The Matrix or Program Manager may schedule additional meetings if necessary

Input and Output Indicators	Success Indicators
<ul style="list-style-type: none"> • Staff time and budgetary spending • Timely submission of sections from committee members • Timely completion of various drafts • Final Report to Congress submission 	<ul style="list-style-type: none"> • Acceptance of the Report by Congress • Adoption of report recommendations by MDP in subsequent years • Reallocation of Year Two MDP budget to address priority areas as outlined in the Report

Program Task 2

Establish a Grant Program to provide financial assistance for projects aligned with the purposes of the Marine Debris Act.

Goals

Initial Goals

Commence establishment of guidelines for the grant program by hiring a grants management specialist, identify contacts for public-private partnerships, and develop awareness campaign.

Interim Goal

Track progress of contacts being made at other agencies and organizations, nourish public-private partnerships for dissemination of information, track progress of guidelines and grant review process.

Final Goals

To respond to proposals received and provide funding.

Program	Collection	Reporting	Feedback
Grant Program	<i>By Whom:</i> Grant Manager <i>In What Form:</i> Progress Reports and Database <i>Frequency:</i> Weekly	<i>To Whom:</i> Matrix Manager <i>In What Form:</i> Progress Reports and Briefing <i>Frequency:</i> Monthly	If Grant Manager is not meeting work plan, Matrix Manager will address the situation as needed.

Input and Output Indicators	Success Indicators
<ul style="list-style-type: none"> • Staff time and budgetary spending • Timely submission of draft guidelines • Final grant guideline submission • Promulgation of guidelines 	<ul style="list-style-type: none"> • Number of grant proposals received • Compatibility with current NOAA grant system

Program Task 3

Undertake education of and outreach to the public and other stakeholders.

Goals

Initial Goal

Commence establishment of education and outreach by hiring a Director of Education by February and an Education and Outreach Program Assistant by March; identifying contacts within NOAA's education department and beyond NOAA in federal and non-federal agencies/organizations involved in oceanographic education and outreach; developing a work plan.

Interim Goals

Track progress of contacts being made at other agencies and organizations, nourish public-private partnerships for dissemination of information; collaborate with fishing industry; develop a marine educational curriculum; develop volunteer initiatives.

Final Goals

Improve the public's awareness of marine debris; communicate the severity of the problem of marine debris; reduce the amount of marine debris entering marine bodies and collecting on beaches by educating the public and other stakeholders.

Program	Collection	Reporting	Feedback
Education and Outreach Program	<i>By Whom:</i> Director of Education, Program Assistant <i>In What Form:</i> Entries into Internal Database / Progress Reports <i>Frequency:</i> Bi-weekly	<i>To Whom:</i> Matrix Manager <i>In What Form:</i> Progress Reports and Spreadsheets <i>Frequency:</i> Monthly	Monthly meetings between Director of Education and NOAA Office of Education If indicators are not being met, Program Manager will address the situation as needed

Input and Output Indicators	Success Indicators
<ul style="list-style-type: none">• Staff time and budgetary spending• Number of meetings between Director of Education and stakeholders• Number of educational materials created• Number of volunteer activities initiated• Number of conferences attended	<ul style="list-style-type: none">• Number of distribution points for educational material• Number of industry operational changes

Programs Tasks: Initiated in Year One, Implemented in Year Two

Program Task 4: Mapping Initiative

Program	Collection	Reporting	Feedback
Mapping and Research Initiative	<i>By Whom:</i> Mapping Expert <i>In What Form:</i> Entries into Internal Database <i>Frequency:</i> Quarterly	<i>To Whom:</i> Program and Matrix Managers <i>In What Form:</i> Progress Reports <i>Frequency:</i> Quarterly	Bi-annual meetings between Mapping Expert, Matrix Manager and Program Manger

Program Task 5: Fishing Gear Initiative

Program	Collection	Reporting	Feedback
Fishing Gear Initiative	<i>By Whom:</i> Fishing Gear Expert <i>In What Form:</i> Entries into Internal Database <i>Frequency:</i> Quarterly	<i>To Whom:</i> Program and Matrix Managers <i>In What Form:</i> Progress Reports <i>Frequency:</i> Quarterly	Bi-annual meetings between Fishing Gear Expert, Matrix Manager and Program Manger

Input and Output Indicators	Success Indicators
<ul style="list-style-type: none"> • Staff time and budgetary spending • Partnerships with other Federal agencies • Timely submission of various drafts of fishing gear section of report • Final submission of report section • Development of work plan for Year Two 	<ul style="list-style-type: none"> • Fulfills requirements of Report to Congress • Lays a solid groundwork for Year Two

Program Task 6: Information Clearinghouse

Program	Collection	Reporting	Feedback
Information Clearinghouse	<i>By Whom:</i> Data Specialist <i>In What Form:</i> Entries into Internal Database <i>Frequency:</i> Bi-weekly	<i>To Whom:</i> Program and Matrix Managers <i>In What Form:</i> Progress Reports and Memo <i>Frequency:</i> Monthly	Bi-annual progress meetings with the Program and Matrix Managers, Mapping Expert, and Fishing Gear Expert

Input and Output Indicators	Success Indicators
<ul style="list-style-type: none"> • Staff time and budgetary spending • Number of meetings with relevant stakeholders 	<ul style="list-style-type: none"> • Ease of incorporation of the Clearinghouse into NOAA's current information system • Quality and quantity of baseline data gathered

APPENDIX F: ACRONYMS/DEFINITIONS

S.362: The Marine Debris Research, Prevention, and Reduction Act during its residence within the Senate

The Act: The Marine Debris Research, Prevention, and Reduction Act

The Committee: The Interagency Marine Debris Committee

This is a committee created by the Marine Debris Research, Prevention, and Reduction Act that aims to increase the collaboration at the Federal level and internationally.

FY: Fiscal Year

Refers to the financial year. For the Marine Debris Prevention and Removal Program the fiscal year is October 1 through September 30.

MARPOL: Annex V of the International Convention for the Prevention of Pollution from Ships

This is an international *Marine Pollution* treaty that contains Annexes that deal with specific discharges. Annex V is for garbage (including plastics). In order to implement MARPOL Annex V, the US Congress passed the Marine Plastic Pollution Research and Control Act of 1987 (MPPRCA), which applies to both US vessels and foreign vessels in US waters.

MDP: Marine Debris Prevention and Removal Program housed within the National Oceanic and Atmospheric Administration

NFWF: National Fish and Wildlife Foundation

A non-government organization that specializes in administering matching grant programs, such as outlined in the Act. This organization is a potential partner for the Marine Debris Prevention and Removal Program's Grant Program.

NMFS: National Marine Fisheries Service

A line office in NOAA that promotes sustainable fisheries, recovery of protected species, and the health of coastal marine habitats in the USA.

NOAA: National Oceanic and Atmospheric Administration

A agency under the U.S. Department of Commerce that will house the Marine Debris Prevention and Removal Program.

NOS: National Ocean Service

This is a line office within NOAA that will house the main scientific functions of the Marine Debris Prevention and Removal Program.

PPI: Program Planning and Integration

This is a line office within NOAA that will handle the coordination of the Marine Debris Prevention and Removal Program across the various line offices.

**APPENDIX G: INTERAGENCY MARINE DEBRIS COMMITTEE
MEMBER CONTACT INFORMATION**

Department of State

U.S. Department of State
2201 C Street NW
Washington, DC 20520
<http://www.state.gov>

Environmental Protection Agency

Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
<http://www.epa.gov>

Marine Mammal Commission

4340 East West Highway
Suite 905
Bethesda, MD 20814
<http://www.mmc.gov>

***National Aeronautics and
Space Administration***

NASA Headquarters
Washington DC 20546-000
<http://www.nasa.gov>

***National Oceanic and Atmospheric
Administration***

Department of Commerce
14th Street & Constitution Avenue, NW
Room 6217
Washington, DC 20230
<http://www.noaa.gov>

United States Coast Guard

Department of Defense
2100 Second Street, SW
Washington, DC 20593
<http://www.uscg.mil>

United States Fish and Wildlife Service

Department of the Interior
1849 C Street, NW
Washington, DC 20242
<http://www.fws.gov>

United States Maritime Administration

Department of Transportation
400 7th Street, SW
Washington, D.C. 20590
<http://www.marad.dot.gov>

United States Navy

Department of Defense
1200 Navy Pentagon
Washington, D.C. 20350-120
<http://www.navy.mil>

APPENDIX H: POTENTIAL PARTNERSHIP INFORMATION

Global Programme of Action for the Protection of the Marine Environment from Land-based Activities

http://www.unep.ch/regionalseas/partners/unep_gpa.htm

International Coral Reef Initiative

<http://www.icriforum.org>

International Maritime Organization

4 Albert Embankment
London SE1 7SR
United Kingdom
<http://www.imo.org>

National Fish and Wildlife Foundation

1120 Connecticut Avenue, NW
Suite 900
Washington, DC 20036
<http://www.nfwf.org>

National Marine Fisheries Service

1315 East West Highway, 9th Floor
Silver Spring, MD 20910
<http://www.nmfs.noaa.gov>

National Sea Grant Office

<http://www.nsgo.seagrant.org>

Ocean Conservancy

2029 K Street Washington, DC 20006
<http://www.oceanconservancy.org>

United Nations Educational, Scientific, and Cultural Organization

7 place de Fontenoy
75352 Paris 07 SP France
<http://www.unesco.org>

United Nations Environment Programme

United Nations Avenue Gigiri
PO Box 30552 00100
Nairobi, Kenya
<http://www.unep.org>

World Conservation Union

Rue Mauverney 28
Gland 1196 Switzerland
<http://www.iucn.org>