Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy										DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*				R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*							
COST ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**Cost To Complete**	**Total Cost**
Total Program Element	19.473	21.714	21.080	-	21.080	21.615	21.934	22.110	22.548	Continuing	Continuing
0401: *Shipboard Waste Mgmt*	5.859	7.705	7.596	-	7.596	7.920	7.760	7.583	7.731	Continuing	Continuing
0817: *Environmental Sustainability Development (NESDI)*	5.965	5.845	5.889	-	5.889	5.997	6.186	6.366	6.486	Continuing	Continuing
9204: *Marine Mammal Research*	7.649	8.164	7.595	-	7.595	7.698	7.988	8.161	8.331	Continuing	Continuing

A. Mission Description and Budget Item Justification

Many environmental laws, regulations, and policies impose restrictions on Navy vessels, aircraft, and facilities that interfere with operations and/or increase the cost of operations. The Navy must be able to conduct its national security mission in compliance with applicable environmental requirements in the U.S. and abroad without compromising
performance, safety, or health, while simultaneously minimizing the cost of compliance. This program develops and evaluates processes, hardware, systems, and operational procedures that will allow the Navy to operate in U.S., foreign, and international waters, air, space, and land areas while complying with environmental laws, regulations,
Executive Orders, policies and international agreements. The projects for this program element support the Navy's compliance with the (a) Clean Water Act, (b) Act to Prevent Pollution from Ships, (c) International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), (d) DoD 4715.6 R1, Regulations on Vessels Owned or Operated by the
Department of Defense, (e) OPNAVINST 5090.1C, Environmental and Natural Resources Program Manual, (f) 40 CFR Part 9 and Chapter VII (Uniform National Discharge Standards [UNDS] Phase I Standard), (g) Executive Order (EO) 13148, Greening the Government Through Leadership in Environmental Management, (h) Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, (i) National Invasive Species Act of 1996, (j) 33 CFR 151 Subpart D-Ballast Water Management for Control of Nonindigenous Species in Waters of the United States, (k) Clean Air Act, (l) Federal Insecticide, Fungicide, and Rodenticide Act, (m) Executive Order (EO) 13423 Strengthening Federal Environmental, Energy, and Transportation Management of 24 January, 2007. References (a) through (m) establish Level I environmental protection requirements for Navy shipboard systems, operations, and discharges in the areas of liquid wastes, hazardous materials, solid wastes, and other significant afloat environmental concerns. Project 0401 supports RDT&E efforts that enable Navy ships and submarines to comply with laws, regulations, and policies in six major areas: (1) Liquid Wastes, (2) UNDS Rulemaking, (3) Hazardous Materials and Pollution Prevention, (4) Hull Antifouling Paints, (5) Technical Authority, and (6) Ballast Water Exchange Improvements. Project 0817 supports RDT&E to develop and validate technologies to enable Navy facilities to comply with environmental laws, regulations, and policies in a cost-effective manner. Project 9204 supports RDT&E to develop planning and monitoring tools for minimizing Fleet contacts with and potential harassment (physiological and behavior) of marine animals including threatened and endangered species in response to Federal laws and regulations and public scrutiny.

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy					DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*		R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*			
B. Program Change Summary ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**
Previous President's Budget	20.207	21.714	21.923	-	21.923
Current President's Budget	19.473	21.714	21.080	-	21.080
Total Adjustments	-0.734	-	-0.843	-	-0.843
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.631	-			
• Program Adjustments	-	-	-0.713	-	-0.713
• Rate/Misc Adjustments	-	-	-0.130	-	-0.130
• Congressional General Reductions Adjustments	-0.103	-	-	-	-

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0401: *Shipboard Waste Mgmt*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
0401: *Shipboard Waste Mgmt*	5.859	7.705	7.596	-	7.596	7.920	7.760	7.583	7.731	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Navy ships and submarines must routinely operate in U.S., international, and foreign waters, and visit numerous U.S. and foreign ports. No body of water is without environmental restrictions that impact the movements and operations of Navy vessels. Environmental requirements tend to be most restrictive in port and in coastal waters, where the Navy's increasing littoral presence places ships and submarines in discharge-restricted waters for longer periods of time. Growing international cooperation in addressing global environmental concerns is resulting in expanding areas of ocean considered environmentally susceptible, where special prohibitions on ship discharges and operations are imposed. Navy vessels must comply with applicable environmental legal requirements while maintaining continued access to all waters for operations, exercises, training, and port access. The large crews and limited on-board space of Navy ships and submarines severely constrain their ability to hold wastes for return to port for shore side disposal. The Shipboard Waste Management RDT&E project evaluates and develops shipboard environmental equipment, systems, technologies, processes, and practices to comply with environmental laws, regulations, Executive Orders, international agreements, foreign-country requirements, and DoD and Navy policies. The project focuses on providing engineering criteria, design guidance, and performance specifications for selecting, procuring, installing, integrating, and operating environmental equipment and systems on Navy ships and submarines, and on defining and developing processes, procedures and logistics support requirements. Environmental equipment, systems, processes and practices must meet legal environmental requirements and be reliable, maintainable and achievable at sea, and impose no or low manning burden. Environmental equipment and systems must meet Navy-unique shipboard requirements (performance, space, weight, shock, vibration, electromagnetic compatibility, manning, automation, etc.), incorporate integrated logistics support, minimize life-cycle cost, and include validated acquisition, design, installation, and operating documentation. Shipboard processes and practices must be feasible and must be compatible with ship and submarine operational, maintenance, manning, habitability, health, and safety requirements. It also addresses afloat environmental issues other than shipboard wastes, e.g., access to environmental data for planning Fleet operations and exercises. The Shipboard Environmental Protection Branch (SEA 05P5) is the designated Technical Warrant Holder for Environmental Systems & Materials Engineering, with responsibility and accountability for ensuring that ships and submarines are designed and upgraded, and can be operated, in compliance with existing and anticipated environmental requirements while minimizing total ownership cost and manning. This responsibility encompasses legacy platforms and new vessel designs, as well as Fleet operations exercises, and training.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Title: Technical Authority	1.977	2.264	2.280
Articles:	0	0	0
FY 2011 Accomplishments: Continued developing environmental equipment/system requirements documentation, design criteria and guidance, specifications and standards, and certification protocols, and perform test and evaluation, to facilitate execution of technical authority for legacy and new-design ship and submarine environmental capabilities.			
FY 2012 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0401: *Shipboard Waste Mgmt*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Continue developing environmental equipment/system requirements documentation, design criteria and guidance, specifications and standards, and certification protocols, and perform test and evaluation, to facilitate execution of technical authority for legacy and new-design ship and submarine environmental capabilities. ***FY 2013 Plans:*** Continue developing environmental equipment/system requirements documentation, design criteria and guidance, specifications and standards, and certification protocols, and perform test and evaluation, to facilitate execution of technical authority for legacy and new-design ship and submarine environmental capabilities.			
Title: Integrated Liquid Wastes	2.762	3.141	3.087
Articles:	0	0	0
FY 2011 Accomplishments: Continued to support rulemaking process in development of Uniform National Discharge Standards (UNDS). Continued development of marine pollution control device (MPCD) treatment systems, technologies and procedures, and evaluation of commercial off-the-shelf (COTS) wastewater systems. ***FY 2012 Plans:*** Continue to support rulemaking process in development of UNDS. Continue development of MPCD treatment systems, technologies and procedures, and evaluation of COTS wastewater systems. ***FY 2013 Plans:*** Continue to support rulemaking process in development of UNDS. Continue development of MPCD treatment systems, technologies and procedures, and evaluation of COTS wastewater systems.			
Title: Hazardous and Other Major Ship Wastes	0.748	1.100	1.216
Articles:	0	0	0
FY 2011 Accomplishments: Continued shipboard hazardous materials substitution and elimination process, and continue test and evaluation of pollution-prevention equipment aboard surface ships and submarines. Completed development and testing of new low/no-copper underwater hull antifouling coatings. ***FY 2012 Plans:*** Continue shipboard hazardous materials substitution and elimination process, and continue test and evaluation of pollution-prevention equipment aboard surface ships and submarines. ***FY 2013 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0401: *Shipboard Waste Mgmt*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Continue shipboard hazardous materials substitution and elimination process, and continue test and evaluation of pollution-prevention equipment aboard surface ships and submarines.			
Title: Common Systems Assessment, Evaluation and Specification	-	0.200	-
Articles:		0	
FY 2012 Plans: Conduct testing of commercial off-the-shelf (COTS) equipment to gain additional information in support of new acquisition program decisions and equipment replacement programs for in-service ships. Candidate systems will be evaluated at two stages. The first stage is a written assessment of the ability to meet life cycle cost goals and technical, operational, and performance standards based on design drawings and manufacturer provided performance data. The second stage is laboratory testing of candidate systems down-selected from the first stage.			
Title: Ballast Water Exchange	0.372	1.000	1.013
Articles:	0	0	0
FY 2011 Accomplishments: Continued ballast water double exchange surveys and procedural product developmental test and evaluation on Expeditionary Warfare ships.			
FY 2012 Plans: Continue ballast water double exchange surveys and procedural product developmental test and evaluation on Expeditionary Warfare ships.			
FY 2013 Plans: Continue ballast water double exchange surveys and procedural product developmental test and evaluation on Expeditionary Warfare ships.			
Accomplishments/Planned Programs Subtotals	5.859	7.705	7.596

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• RDTEN/0601153N: *Defense Research Sciences*	418,108.000	446.123	460.129	0.000	460.129	483.525	504.318	526.538	550.270	0.000	421,476.084

D. Acquisition Strategy

RDT&E Contracts are Competitive Procurements.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0401: *Shipboard Waste Mgmt*

E. Performance Metrics

Quarterly Program Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0401: *Shipboard Waste Mgmt*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Ancillary Hardware Development	Various	Misc. Contracts:Not Specified	19.149	-		-		-		-	0.000	19.149	Continuing
Primary Hardware Development	C/CPFF	Oceaneering:Not Specified	1.000	-		-		-		-	0.000	1.000	Continuing
Systems Engineering	C/CPFF	John J. McMullen & Son:Not Specified	4.487	-		-		-		-	0.000	4.487	Continuing
		Subtotal	24.636	-		-		-		-	0.000	24.636	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	WR	SPAWAR:Charleston, SC	10.838	-		-		-		-	0.000	10.838	Continuing
		Subtotal	10.838	-		-		-		-	0.000	10.838	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	MIPR	US Army Corps of Engineers:Norfolk, VA	0.687	-		-		-		-	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	NSWCCD, Bethesda, MD:Bethesda, MD	174.528	6.750	Nov 2011	6.707	Nov 2012	-		6.707	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	NSWCIHD:Indian Head, MD	-	0.701	Feb 2012	0.647	Feb 2013	-		0.647	0.000	1.348	
Developmental Test & Evaluation	WR	NRL,Wash,DC:Wash,DC	30.661	-		-		-		-	0.000	30.661	
Developmental Test & Evaluation	WR	SPAWARSYSCEN:SD,CA	11.952	0.113	Nov 2011	0.113	Nov 2012	-		0.113	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0401: *Shipboard Waste Mgmt*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	Misc. Govt Labs:TBD	22.975	-		-		-		-	0.000	22.975	
Developmental Test & Evaluation	C/CPFF	SAIC:San Diego, CA	15.570	-		-		-		-	0.000	15.570	
Developmental Test & Evaluation	C/CPFF	Misc. Contracts:TBD	13.103	0.111	Feb 2012	0.099	Feb 2013	-		0.099	Continuing	Continuing	Continuing
Process Control Engineering	C/CPFF	M. Rosenblatt & Sons:Arlington, VA	6.547	-		-		-		-	0.000	6.547	Continuing
Developmental Test & Evaluation	C/CPFF	ONR:Arlington, VA	0.400	-		-		-		-	0.000	0.400	Continuing
Developmental Test & Evaluation	WR	Naval Postgraduate School:Monterey, CA	1.800	-		-		-		-	0.000	1.800	Continuing
Process Control Engineering	MIPR	EPA, Hdqtrs:Washington, DC	0.840	-		-		-		-	0.000	0.840	Continuing
		Subtotal	279.063	7.675		7.566		-		7.566			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Allot	NAVSEA HQ:Washington, DC	0.310	0.030	Nov 2011	0.030	Nov 2012	-		0.030	Continuing	Continuing	Continuing
SBIR Assessment	TBD	Not Specified:Not Specified	0.078	-		-		-		-	0.000	0.078	Continuing
		Subtotal	0.388	0.030		0.030		-		0.030			

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	314.925	7.705		7.596		-		7.596			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0401: *Shipboard Waste Mgmt*

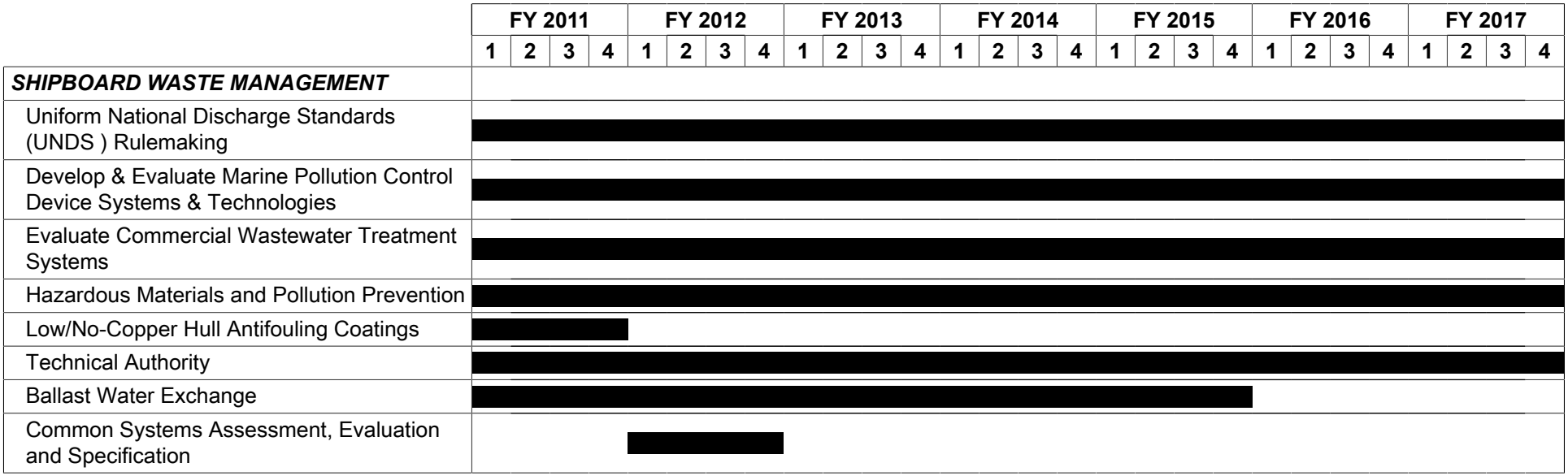

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603721N: *Environmental Protection*	**PROJECT** 0401: *Shipboard Waste Mgmt*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
SHIPBOARD WASTE MANAGEMENT				
Uniform National Discharge Standards (UNDS) Rulemaking	1	2011	4	2017
Develop & Evaluate Marine Pollution Control Device Systems & Technologies	1	2011	4	2017
Evaluate Commercial Wastewater Treatment Systems	1	2011	4	2017
Hazardous Materials and Pollution Prevention	1	2011	4	2017
Low/No-Copper Hull Antifouling Coatings	1	2011	4	2011
Technical Authority	1	2011	4	2017
Ballast Water Exchange	1	2011	4	2015
Common Systems Assessment, Evaluation and Specification	1	2012	4	2012

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0817: *Environmental Sustainability Development (NESDI)*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
0817: *Environmental Sustainability Development (NESDI)*	5.965	5.845	5.889	-	5.889	5.997	6.186	6.366	6.486	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Inherent to the realization of the vision outlined in Sea Power 21 are certain environmental consequences that will, to a lesser or greater degree, be an impact on the Navy's ability to fully achieve the strategy outlined in the Navy Capability Pillars (NCP) SEA SHIELD, SEA STRIKE, SEA BASING and FORCEnet and the supporting initiatives of SEA WARRIOR, SEA TRIAL and SEA ENTERPRISE. Readiness and training are primary considerations for determining whether any fighting force is at its peak proficiency. The ability to train our forces in a realistic environment is paramount. Today's reality requires training and operating within environmental constraints (national and international laws and agreements), and searching for alternatives to comply with and alleviate those constraints. Moreover, as we develop new systems and technologies in support of Sea Power 21, the Navy must anticipate potential environmental regulations which, while not currently an issue, could in the future adversely impact our ability to project and sustain our forces at home and abroad.

This program identifies pervasive Navy shore side environmental requirements and develops and validates information, new processes, and technologies that address requirements that pose significant impact on Naval shore activities in complying with environmental laws, regulations, orders, and policies. The goal of the program is to maximize opportunities for significant cost savings while minimizing personnel liabilities, operational costs, and regulatory oversight and preserving or enhancing the ability of Naval shore activities to accomplish their required missions and functions in support of the Navy's transformational strategy. Program investments supports 4 of 5 Environmental Enabling Capabilities (EEC-2 though 5) that are required to meet the objectives of Sea Power 21.

EEC-2 MAXIMIZE TRAINING AND TESTING RANGE REQUIREMENTS WITHIN ENVIRONMENTAL CONSTRAINTS: This capability addresses environmental impacts and restrictions at Navy land and sea ranges, including munitions testing and manufacturing, to ensure Navy ranges are available to conduct required training and testing operations for the Fleet. Investments in EEC-2 provide validated knowledge, models, and processes to mitigate environmental impacts, restrictions, and costs at Navy training and test ranges to maximize the availability and utilization of the ranges. The results support operational readiness by providing the tools and technologies necessary for sustaining and managing Navy land and sea ranges related to unexploded ordnance (UXO) and munitions, encroachment, air quality, airborne noise, water quality, and wetlands. Capabilities gained include the ability to assess and determine the risks from underwater UXO, the evaluation and prioritization ordnance contaminated sites for evaluation in environmental programs, and the implementation of range specific best management practices by evaluating and modeling available process, procedures, and technologies.

EEC-3 PLATFORM MAINTENANCE AND REPAIR WITH MINIMAL ENVIRONMENTAL FOOTPRINT: This capability focuses on minimizing or eliminating environmental impact related to Navy and Marine Corps weapon system repair and maintenance operations. Investments in EEC-3 provide valid knowledge, models, process, and technologies to minimize regulated emissions, discharges and hazardous material usage during the repair and maintenance of ships, submarines, and surface/sub-surface vehicles and aircraft and air vehicles. The program supports Fleet operational readiness and Navy acquisition communities by investing in information to understand emerging environmental requirements and to develop innovative processes and technologies that result in savings while reducing the fleet

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0817: *Environmental Sustainability Development (NESDI)*

environmental constraints related to platform maintenance. Capabilities and benefits gained include, but are not limited to, the reduction in the usage of heavy metals used in metal finishing (chromium and cadmium), reduced hazardous air pollutant (HAP) emissions, and the development of best management practices and tools to minimize the use of hazardous materials and the generation of hazardous wastes associated with maintaining and repairing ships, submarines and aircraft and unmanned vehicles. Results of program investments will be leveraged across weapon system and platform acquisition to ensure continued reduction in lifecycle costs and long-term environmental compliance burdens to the Fleet.

EEC-4. SUPPORT SHORE READINESS WITHIN ENVIRONMENTAL CONSTRAINTS: Naval shore establishment requires the capability to operate and maintain facilities and provide waterfront and airfield services to the fleet while complying with applicable environmental regulations and minimizing environmental impacts and costs. The program invests in knowledge and innovative processes and technologies that minimize infrastructure and operational costs, regulated emissions, while minimizing discharges and hazardous material usage from ship (waterfront) and aviation operations. Capabilities and benefits gained under EEC-4 include reduced costs associated with wastewater treatment, elimination/reduction in the use of HAPs, ozone depleting substances (ODSs), and volatile organic compounds (VOCs), and the associated reporting requirements, reduced hazardous waste and disposal costs, and improved storm water management.

EEC-5. COST-EFFECTIVE MANAGEMENT OF ENVIRONMENTAL REGULATORY REQUIREMENTS: The environmental compliance regulations require base managers to permit, monitor and report on many processes associated with weapon system and platform operations. Naval shore environmental managers require the capability to efficiently and cost effectively manages these compliance requirements. Under EEC-5, the program invests in improved data collection, methods, and models to assess environmental impacts and ecological risk assessments of Naval Operations on harbors, U.S. waterways, and surrounding communities. Benefits include gaining standardized technical environmental management improvements/techniques related to source control, assessment, and monitoring. EEC-5 also provides validated knowledge, models, processes and technologies to improve environmental monitoring and reporting, and to reduce the cost of compliance with regulations applicable to coastal contamination and contaminated sediments.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Title: Maximize Training & Testing Requirements Within Environmental Constraints	2.141	1.913	1.370
Articles:	0	0	0

FY 2011 Accomplishments:
Completed the laboratory analysis of the long term disposition of seafloor cables which will identify cable impacts to the marine environment aiding the sustainment and management of Navy underwater ranges and support new underwater surveillance systems that require the laying of seafloor hardware and cables. Completed the analysis of the environmental effects of lasers on biota in the marine environment. The culmination of this work will provide the Navy environmental planning offices with the tools necessary to technically defend EISs as they relate to the use of lasers in the marine environment. Continue providing validated knowledge, models, and processes to mitigate environmental impacts, restrictions, and costs at Navy training and test ranges to maximize the availability and utilization of the ranges. Continued effort to assess environmental risk associated with military expendable material which is used on underwater ranges. Continued the validation of forensic approaches to perchlorate source identification at Navy ranges. Implement best management practice DEM/VAL for mitigation of environmental impacts

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0817: *Environmental Sustainability Development (NESDI)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
from venting of full scale practice bombs at Navy ranges. Conduct field study for long term disposition of seafloor communication cables. ***FY 2012 Plans:*** Continue providing validated knowledge, models, and processes to mitigate environmental impacts, restrictions, and costs at Navy training and test ranges to maximize the availability and utilization of the ranges. Continuation of the risk assessment associated with military expendable material used in underwater ranges. Finalize process to determine background perchlorate sources at Navy ranges. Conduct one-year post-survey for cable pull field study to determine long term effects and site recovery of a cable removal in the near-shore environment. Complete assessment of alternative tank target. Initiate demonstration of passive samplers for assessing environmentally realistic concentrations of munitions constituents at Underwater Unexploded Ordnance sites and the detection and classification of munitions and explosives of concern in shallow highly dynamic underwater environments. ***FY 2013 Plans:*** Complete the validation of forensic approaches to perchlorate natural and anthropogenic source identification at Navy ranges. Continue providing validated knowledge, models, and processes to mitigate environmental impacts, restrictions, and costs at Navy training and test range to maximize the availability and utilization of the ranges.			
Title: Maintenance	0.848	0.900	1.080
Articles:	0	0	0
FY 2011 Accomplishments: Completed aircraft sustainment related projects such as non-chromated post treatment, and low temperature powder coating. Alternative solvent demonstrations for ship maintenance operations and identification of alternatives for NAVSEA targeted chemicals continued. As a result of this effort, a new HAP-free/low-VOC cleaner specification was developed and issued. The development of hazardous material allocation information for ship maintenance continued as did the bio-based hydraulic and metal working fluids demonstration. Continue to demonstrate tools/mitigation measures for coating operations on vessel freeboard areas, transition prohibited and controlled chemical list to user community, determine additional mil standard for solvent substitutions, and perform corn hybrid polymer demonstrations. Further testing on cadmium tank electroplating alternatives and electrical connectors' evaluation. Completed demonstration of the use of plastic blast media and removed coke deposits from the F404 engine shaft, thereby eliminating the use of a hazardous cleaning compound from this maintenance procedure. ***FY 2012 Plans:*** Continue all aviation sustainment related projects related to chrome alternatives and cadmium reductions, continue the elimination of overspray in shipbuilding and facilities maintenance operations. Initiate projects on cyanide waste reduction of electroplating			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0817: *Environmental Sustainability Development (NESDI)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
and stripping process, lead-free electric primers for medium caliber ammunition, and mobile pier and facility waste water treatment system. ***FY 2013 Plans:*** Continue providing new systems and processes to minimize regulated emissions, discharges and hazardous material usage resulting from the repair and maintenance of ships, submarines, and aircraft. Complete aircraft sustainment related projects. Develop dry dock best management practices and decision selection tool assisting Naval Shipyards, stations and bases in meeting the copper discharge standards. Alternative solvents demonstrations for ship maintenance operations and identification of alternatives for NAVSEA targeted chemicals continue. The development of hazardous material allocation information for ship maintenance continues.			
Title: Support Shore Readiness within Environmental Constraints ***Articles:*** ***FY 2011 Accomplishments:*** Completed the navigational dredge spoil management IDR. Complete transition efforts for NoFoamTM System for firefighting pumper trucks and the No FoamTM system for aircraft hangar fire suppression system. Initiate dem/val of a hull maintenance shroud to capture waste streams during repair and painting operations. Continue validation of a mobile surface cleaning technology for critical cleaning of shore side surfaces to remove contaminants. Continue providing new systems and processes to minimize regulated emissions, discharges and hazardous material usage resulting specifically from waterfront support, and other base operations. This includes final demonstration for the Motion Assisted Environmental Enclosure (MAEE) for overspray containment and completed the vertical launch missile tube demonstration. ***FY 2012 Plans:*** Continue providing new systems and processes to minimize regulated emissions, discharges and hazardous material usage resulting specifically from waterfront support such as the hull maintenance shroud and transition of MAEE. Initiate a methodology to assess essential fish habitat for Navy coastal properties. ***FY 2013 Plans:*** Continue providing new systems and processes to minimize regulated emissions, discharges and hazardous material usage resulting specifically from waterfront support, aviation support, and other base operations. Continue select demonstrations of alternative solvents for industrial operations.	2.473 0	2.432 0	1.250 0
Title: Cost-Effective Management of Environmental Regulatory Requirements ***Articles:*** ***FY 2011 Accomplishments:***	0.503 0	0.600 0	2.189 0

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0817: *Environmental Sustainability Development (NESDI)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Complete the waste to clean energy IDR and the metal cutting IDR. Complete the Chemical Safety Environmental Management System Enterprise (CS-EMS) demonstration for a potential enterprise solution. Complete the Predictive Trajectory Model for oil spills for Navy harbors. Complete assessment strategy for vapor intrusion. This project resulted in a technical report that identifies existing best practices, knowledge and data gaps, and future research in vapor intrusion assessment strategies. Conduct VLS wastewater treatment system demonstration. Complete pollutant source tracking effort; the real-time drinking water quality monitoring system; sustainable naval facilities; and use of biodiesel for ground tactical vehicles. Continue with the evaluation of re-suspension associated with dredging, extreme storm events and propeller wash modeling effort. Continue with the demonstration of navigational dredge material for beneficial use; the abiotic treatment of 1,2,3-trichloropropane (TCP) to protect drinking water resources; the automated condition assessment of coral reefs; and the predictive aquatic fate and transport model in support of Total Maximum Daily Load (TMDL). Initiate efforts electrochemical detection and load reduction of copper and zinc in storm water runoff; innovative technologies to control emissions from metal cutting operations; optimization of the storm water dual media filtration system at the NRRC in San Diego; modeling tool for Navy facilities to quantify sources, loads & mitigation actions of metals in storm water discharges; compliance with the emerging requirements of the Stage II disinfectant and disinfection byproduct rule; methodology for identifying and quantifying metal pollutant sources in storm water runoff ; and Navy-wide expansion of the Programmatic Environmental, Safety and Health Evaluation Document Authoring Tool.			
FY 2012 Plans: Continue providing validated knowledge, models, processes and systems to improve environmental monitoring and reporting, and to reduce the cost of compliance with regulations applicable to coastal contamination and contaminated sediments. Reduce Contaminant Transport Associated with Storm water Runoff. Continue efforts such as electrochemical detection and load reduction of copper and zinc in storm water runoff; innovative technologies to control/reduce emissions from metal cutting operations; optimization of the storm water dual media filtration system at the NRRC in San Diego; modeling tool for Navy facilities to quantify sources, loads & mitigation actions of metals in storm water discharges; compliance with the emerging requirements of the Stage II disinfectant and disinfection byproduct rule; methodology for identifying and quantifying metal pollutant sources in storm water runoff ; and Navy-wide expansion of the Programmatic Environmental, Safety and Health Evaluation document authoring tool. Continue with leveraged efforts Smart Water Conservation Systems for Irrigated Landscapes; water conservation: treatment and recycling of waste water; heavy diesel hybrid demonstration; demonstration and validation of sediment ecotoxicity assessment ring technology for assessment of ecological exposure; demonstration and validation of delivery and stability of reactive amendments for the in situ treatment of contaminated sediments in Navy harbors. Initiate work in the separation, detection, and removal of MEC/UXO from dredged sediment using physical separation, low cost selective polymer and laser interferometer real time sensors for detection of solvents in contaminated groundwater plumes, validation of a low tech storm water procedural best management practice, dynamic mixing zone modeling for NPDES permits, and toxicity associated with poly-aromatic hydrocarbons used in clay targets. Continue to collect data to establish guidelines and			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0817: *Environmental Sustainability Development (NESDI)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
limitations for the use of biodiesel with ground tactical vehicles and equipment in order to reduce hazardous emissions from diesel engines. ***FY 2013 Plans:*** Continue providing validate knowledge, models, processes and systems to improve environmental monitoring and reporting, and reduce the cost to compliance with regulations applicable to coastal contamination and contaminated sediments. Continue DEM/ VA of Automated Condition Assessment of Coral Reefs at Guam Apra Harbor.			
Accomplishments/Planned Programs Subtotals	5.965	5.845	5.889

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

This project is categorized as Non-ACAT (Non Acquisition). The project delivers a broad spectrum of products that require a variety of acquisition processes to implement. Equipment products for naval stations and other mission funded activities costing over $100K are often procured directly through the base operating budget. Equipment products for Shipyards and other Navy Working Capital Fund (NWCF) activities costing over $100K are procured through their Capital Purchases Program (CPP). For both types of activities, equipment products costing less than $100K, and process changes not requiring the purchase of new equipment such as consumable material or product substitutions, are funded through the activity's operating budgets. Occasionally there is a technology that must be implemented as a specialized facility. These are acquired through the Military Construction (MCON) Program. All these acquisition processes are pursued using a common strategy that satisfies the needs of all the critical stakeholders: 1) Fleet end user; 2) Funding sponsor for the Navy end user; 3) Other stakeholders with cognizance over the Navy process or operation being changed, 4) Cognizant environmental federal, state, and local regulators; and 5) The private or government organization that will produce the product.

E. Performance Metrics

Quarterly Budget Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0817: *Environmental Sustainability Development (NESDI)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EEC 2	Various	NFESC:PT HUENEME, CA	1.742	0.682	Oct 2011	0.302	Oct 2012	-		0.302	0.000	2.726	Continuing
EEC 2	Various	SSC:SAN DIEGO, CA	2.871	1.231	Aug 2012	0.764	Mar 2013	-		0.764	0.000	4.866	Continuing
EEC 2	Various	NSWC:BETHESDA, MD	0.717	-		-		-		-	0.000	0.717	Continuing
EEC 3	Various	NAWC:PATUXENT RIVER, MD	0.819	0.300	Aug 2012	0.300	Mar 2013	-		0.300	0.000	1.419	Continuing
EEC 3	Various	NSWC:BETHESDA, MD	2.234	0.400	Aug 2012	0.400	Feb 2013	-		0.400	0.000	3.034	Continuing
EEC 3a	Various	NSWC:BETHESDA, MD	1.019	-		-		-		-	0.000	1.019	Continuing
EEC 3b	Various	NFESC:PT HUENEME, CA	0.200	0.200	Oct 2011	0.267	May 2013	-		0.267	0.000	0.667	Continuing
EEC 4	Various	NFESC:PT HUENEME, CA	4.511	0.632	Jul 2012	0.632	Aug 2013	-		0.632	0.000	5.775	Continuing
EEC 4	Various	NSWC:BETHESDA, MD	1.511	0.950	Jun 2012	0.950	Oct 2012	-		0.950	0.000	3.411	Continuing
EEC 4a	Various	SSC:SAN DIEGO, CA	1.710	0.850	Jul 2012	0.800	Apr 2013	-		0.800	0.000	3.360	Continuing
EEC 5	Various	NFESC:PT HUENEME, CA	0.831	0.300	Apr 2012	0.300	Jul 2013	-		0.300	0.000	1.431	Continuing
EEC 5	Various	SSC:SAN DIEGO, CA	0.705	-		-		-		-	0.000	0.705	Continuing
EEC 5	Various	NAWC:PATUXENT RIVER, MD	0.326	0.300	Jul 2012	0.300	Jun 2013	-		0.300	0.000	0.926	Continuing
EEC 5	Various	NSWC:BETHESDA, MD	0.415	-	Jun 2012	-	Jun 2013	-		-	0.000	0.415	Continuing
EEC 5	Various	NAWCWD:CHINA LAKE, CA	-	-		0.400	May 2013	-		0.400	0.000	0.400	Continuing
EEC 5	Various	NAWC:LAKE HURST, NJ	-	-		0.200	May 2013	-		0.200	0.000	0.200	Continuing
EEC 5	Various	NSWC:INDIAN HEAD, MD	-	-		0.274	Aug 2013	-		0.274	0.000	0.274	Continuing
		Subtotal	19.611	5.845		5.889		-		5.889	0.000	31.345	

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0817: *Environmental Sustainability Development (NESDI)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Performing Activities: Naval Surface Warfare Center, Carderock Division (NSWC/CD), Naval Facilities Engineering Service Center (NFESC/MD), Naval Surface Warfare Center, Indian Head Division (NSWC/Bethesda MD), Space and Warfare Systems Center, San Diego (SSC/SC), Naval Air Warfare Center (NAWC/PAX), Naval Air Warfare Center (NAWCWD/ China Lake) Total Prior Years Cost: Subtotal does not include performing activities from prior years that are no longer performing activities. Award Dates: About 55% of the project is executed via contracts awarded by the performing activities.

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	19.611	5.845		5.889		-		5.889	0.000	31.345	

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0817: *Environmental Sustainability Development (NESDI)*

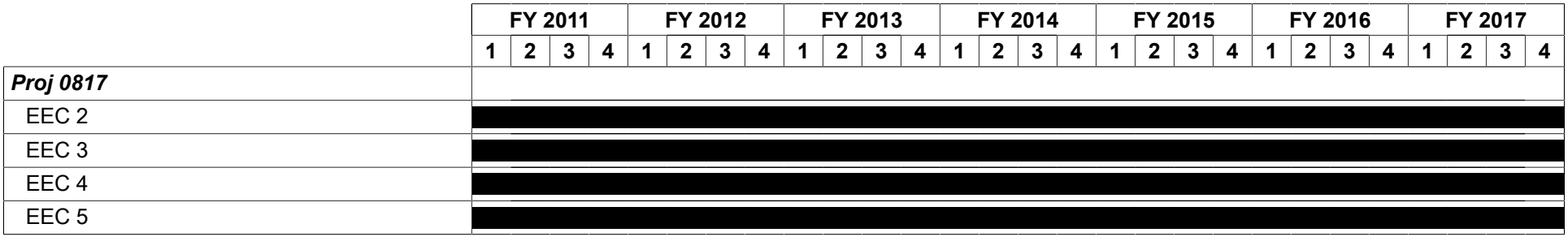

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 0817: *Environmental Sustainability Development (NESDI)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0817				
EEC 2	1	2011	4	2017
EEC 3	1	2011	4	2017
EEC 4	1	2011	4	2017
EEC 5	1	2011	4	2017

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 9204: *Marine Mammal Research*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
9204: *Marine Mammal Research*	7.649	8.164	7.595	-	7.595	7.698	7.988	8.161	8.331	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Navy has been and will continue to be subject to litigation with regard to the potential injuring and killing of marine animals by the use of intense underwater sound. Since Fleet operation and training areas coincide with known or probable marine mammal habitats, migration routes, or breeding areas, the possibility exists that such incidents are likely to continue in the future. The increasing public interest and pressure has resulted in escalating Fleet costs. For example, Fleet and SYSCOM development activities have been interrupted, modified, or altogether cancelled and environmental regulations have, among other things, required new ship construction shock trials to obtain Federal permits and conduct extensive environmental planning that can take several years to complete. The incorporation of mitigation measures in Fleet training operations to minimize the potential adverse effects on protected marine animals can significantly reduce the realism of these operations. In addition, the testing, evaluation, and deployment of new sonar detection and monitoring systems that use active acoustics are under intense public scrutiny for their potential adverse effects on whales and other marine mammals. Navy needs scientific evidence to substantiate its claims of limited or inconsequential adverse effects to marine life from operations.

This project primarily focuses on the development of planning, monitoring, and mitigating tools to aid the Fleet in minimizing contact with and the potential harassment of protected marine animals during operations, exercises, training, and undersea surveillance and weapons testing. These new capabilities will encompass historical and newly

acquired data and analytical models that together can predict marine animal habitats (where they are likely to be) and their natural and expected behavior (diving patterns, prey localization, calling activity, etc.). This project consists of three major areas that will help ensure Navy compliance with the Marine Mammal Protection Act (MMPA).

These areas are (1) Marine Mammal Ecology and Population Dynamics- Determine the likelihood of the presence of marine mammal species during observed and forecast oceanographic conditions by developing habitat and ecological models. Refine marine mammal survey techniques to optimize the accuracy of abundance estimates in small ocean regions of Navy interest.

Conduct analysis of long range, low frequency marine mammal vocalizations to determine natural variations in population estimates, residency, and migration routes over large ocean regions; (2) Criteria, Thresholds, and Mitigation - Establish criteria and thresholds from which to measure potential impact on marine mammals from Navy training

operations. Determine the effectiveness and usefulness of various mitigation measures in relation to the potential impact of Navy operations on marine mammals; and (3) Passive Acoustic Monitoring - Conduct Passive Acoustic Monitoring of Marine Mammals, particularly on Navy undersea ranges. Several feasibility demonstrations reveal the potential of passive acoustic monitoring as a unique form of mitigation and a special tool to obtain critical information about normal marine mammal behavior. Any impact of Navy operations on marine mammals, particularly behavior modification, will be derived after normal variations in marine mammal behavior resulting from natural factors are determined. Several remaining unknowns must be addressed before passive acoustic monitoring techniques are developed as an institutionalized system available to the Fleet.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 9204: *Marine Mammal Research*

Accurate and timely monitoring and predicting the movement of whales and other protected marine animals plus an enhanced knowledge of how marine animals may react to Fleet activities (e.g., physiological and behavioral effects) will reduce Navy interaction with these animals; minimize the risk that legally-imposed monitoring and avoidance
measures will adversely affect Fleet operations and exercises; minimize the substantial costs associated with operations, exercises, and tests that have to be modified or curtailed as a result of concerns about protected marine animals; and will reduce the likelihood of litigation related to actual or anticipated compliance problems with protected animals.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Title: Marine Mammal Ecology and Population Dynamics	1.989	2.041	1.936
Articles:	0	0	0
FY 2011 Accomplishments: Continue investigations in marine mammal location, abundance, and movement through habitat investigations; predictive models; marine mammal database; and data analysis, protocols and surveys.			
FY 2012 Plans: Continued research on integrated ecosystems; sensor and tag development; marine mammal diving and stress physiology, and the population structure of beaked whales in the vicinity of Navy training ranges.			
FY 2013 Plans: Continued research on integrated ecosystems; sensor and tag development; marine mammal diving and stress physiology, and the population structure of beaked whales in the vicinity of Navy training ranges.			
Title: Criteria and Thresholds, Physiology and Behavior, and Effects of Sound	3.896	4.082	3.723
Articles:	0	0	0
FY 2011 Accomplishments: Continue investigations in criteria and thresholds, physiology and behavior, and effects of sound through hearing sensitivity; temporary threshold shift (TTS)/Sub-TTS; physical injury models; cumulative effects of sound and/or multiple events; effects of sound on the marine mammal habitat.			
FY 2012 Plans: Continued research to determine what constitutes biologically significant behavioral response to Navy-generated sound on individuals with respect to disruption of natural behavior patterns, ascertaining the short and long-term effects of such disruptions and documenting avoidance behaviors.			
FY 2013 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 9204: *Marine Mammal Research*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Continued research to determine what constitutes biologically significant behavioral response to Navy-generated sound on individuals with respect to disruption of natural behavior patterns, ascertaining the short and long-term effects of such disruptions and documenting avoidance behaviors.			
Title: Mitigation Methodologies: Monitoring, New Technology, and Risk Assess	1.764	2.041	1.936
Articles:	0	0	0
FY 2011 Accomplishments: Continue mitigation methodologies for monitoring, new technology and risk assessment through passive acoustic monitoring; active acoustic monitoring; improved tag development; alternative monitoring; defining risk assessment variables; model risk assessment and determine mitigation effectiveness.			
FY 2012 Plans: Continued research to determine the observation, detection and classification measures required to develop effective monitoring and mitigation procedures. Focus to improve marine mammal monitoring capabilities over current methods by developing new and adapting existing technology.			
FY 2013 Plans: Continued research to determine the observation, detection and classification measures required to develop effective monitoring and mitigation procedures. Focus to improve marine mammal monitoring capabilities over current methods by developing new and adapting existing technology.			
Accomplishments/Planned Programs Subtotals	7.649	8.164	7.595

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• RDTEN/0601153N: *Defense Research Sciences*	418.108	446.123	460.129	0.000	460.129	483.525	504.318	526.538	550.270	0.000	3,786.192
• RDTEN/0602435N: *Ocean Warfighting Environment Applied Research*	47.645	50.076	49.295	0.000	49.295	49.987	51.615	52.706	53.602	0.000	402.024
• RDTEN/0602782N: *Mine & Expeditionary Warfare Applied Research*	35.159	37.583	32.177	0.000	32.177	32.629	33.745	34.515	35.105	0.000	280.565

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 9204: *Marine Mammal Research*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• RDTEN/0603235N: *Common Picture Advanced Technology*	93.403	49.068	43.042	0.000	43.042	45.759	42.996	40.351	42.547	0.000	455.784

D. Acquisition Strategy

(U) RDT&E Contracts are Competitive Procurements.

E. Performance Metrics

Quarterly Program Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 9204: *Marine Mammal Research*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NUWC:Newport, RI	4.623	1.761	Nov 2011	1.632	Nov 2012	-		1.632	Continuing	Continuing	Continuing
Developmental Test & Evaluation	SS/CPFF	SEA Inc:California	0.965	0.265	Dec 2011	0.265	Dec 2012	-		0.265	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	NPGS:Monterey, CA	2.395	0.530	Dec 2011	0.489	Dec 2012	-		0.489	Continuing	Continuing	Continuing
Developmental Test & Evaluation	MIPR	NOAA Fish Science Center:California	2.000	0.688	Dec 2011	0.632	Dec 2012	-		0.632	Continuing	Continuing	Continuing
Developmental Test & Evaluation	SS/CPFF	Scripps Institute:California	7.173	1.062	Dec 2011	1.049	Dec 2012	-		1.049	Continuing	Continuing	Continuing
Developmental Test & Evaluation	SS/CPFF	Oregon State Univ.:Oregon	1.206	0.274	Dec 2011	0.222	Dec 2012	-		0.222	Continuing	Continuing	Continuing
Developmental Test & Evaluation	SS/CPFF	Woods Hole Oceanographic Inst:Massachusettes	1.901	0.666	Dec 2011	0.563	Dec 2012	-		0.563	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	SPAWAR:San Diego, CA	1.507	0.544	Nov 2011	0.515	Nov 2012	-		0.515	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	Cascadia:Cascadia, WA	1.410	1.025	Dec 2011	0.950	Dec 2012	-		0.950	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	NOAA Fish Science Center:Massachusettes	0.400	0.326	Dec 2011	0.312	Dec 2012	-		0.312	Continuing	Continuing	Continuing
Developmental Test & Evaluation	SS/CPFF	San Diego State Univ:San Diego, CA	1.301	0.486	Dec 2011	0.457	Dec 2012	-		0.457	Continuing	Continuing	Continuing
Developmental Test & Evaluation	C/CPFF	St. Andrews Univ.:Scotland	0.270	0.264	Dec 2011	0.245	Dec 2012	-		0.245	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	CNAF:San Diego, CA	1.315	0.133	Nov 2011	0.133	Nov 2012	-		0.133	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	Bahamas Marine Mammal Research Organization (BMMRO:Bahamas	-	0.140	Dec 2011	0.131	Dec 2012	-		0.131	Continuing	Continuing	Continuing
		Subtotal	26.466	8.164		7.595		-		7.595			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 9204: *Marine Mammal Research*	

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	26.466	8.164		7.595		-		7.595			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603721N: *Environmental Protection*	PROJECT 9204: *Marine Mammal Research*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603721N: *Environmental Protection*	**PROJECT** 9204: *Marine Mammal Research*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MARINE MAMMAL RESEARCH				
Marine Mammal Ecology and Population Dynamics	1	2011	4	2017
Criteria and Thresholds, Physiology and Behavior, and Effects of Sound	1	2011	4	2017
Mitigation Methodologies: Monitoring, New Technology, and Risk Assessment	1	2011	4	2017