

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification								February 2007		
Appropriation/Budget Activity <b>RDT&amp;E,N BA4</b>					R-1 Item Nomenclature: 0603725N/ Facilities Improvement					
COST (\$ in millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013		
Total PE Cost	7.134	8.263	4.131	4.090	4.072	4.026	4.096	4.164		
0995 Naval Facilities System	1.435	1.691	1.738	1.800	1.862	1.914	1.946	1.979		
3155 Force Protection Ashore	4.549	2.488	2.393	2.290	2.210	2.112	2.150	2.185		
9859 Regenerative Fuel Cell Back-up Power (Congressional Add)	1.150									
9859N Regenerative Fuel Cell Back-up Power (Congressional Add)		1.096								
9A11N Advanced Tech to Reduce Vulnerability of Military Installations (Congressional Add)		1.992								
9A12N Permanent Magnet Linear Generator Power Buoy System (Congressional Add)		0.996								

**A. Mission Description and Budget Item Justification:**

(U) This program provides for capabilities to a) overcome performance limitations and reduce the life cycle cost of shore facilities, and b) provide protection against terrorist attacks for shore installations and their operations. The program focuses on technical and operational issues of specific Navy interest, where there are no unbiased test validated Commercial Off the Shelf (COTS) solutions available, and where timely capabilities may not materialize without specific demonstration or validation by the Navy. Additionally, the program completes the development of technologies originating from Navy, DOD and other sources of Science and Technology programs, including the National Science Foundation (NSF), the National Institute of Standards and Technology (NIST) and Department of Energy (DOE). Validated technologies are implemented in the Navy's Military Construction (MILCON) and Facilities, Sustainment Restoration and Modernization (FSRM) program, and Antiterrorism and Force Protection (ATFP) Other Procurement, Navy (OP,N) program. Project 0995 addresses four Navy facilities requirements during the fiscal years FY 2006 through FY 2009: Waterfront Facilities Repair and Upgrade, Facilities Technologies to Reduce the Cost of Facilities, Sustainment, Restoration and Modernization, and Modular Hybrid Pier for reducing the total ownership cost of future facilities. This project is consistent with recommendation of two National Academy of Sciences Reports: "The Role of Federal Agencies in Fostering New Technology and Innovation in Building" and "Federal Policies to Foster Innovation and Improvement in Constructed Facilities." Starting in FY2006 the Force Protection Ashore Project 3155, addresses selective topics in simulation and risk modeling; and material technologies to reduce the vulnerability of installations; and reduce the acquisition and operating costs of protective technologies. The demonstrations and validations provide the independent, technical and operational test data for the development of competitive performance specifications to acquire the required capabilities. The ATFP project is coordinated with other DOD programs.

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**EXHIBIT R-2, RDT&E Budget Item Justification**

**February 2007**

Appropriation/Budget Activity

**RDT&E,N BA4**

R-1 Item Nomenclature:

0603725N/ Facilities Improvement

**B. Program Change Summary:**

Funding:	FY 2006	FY 2007	FY 2008	FY 2009
Previous PRES Budget: (FY07 Pres Controls)	5.296	4.194	4.183	4.101
Current PB Budget: (FY08/09 PB Controls)	7.134	8.263	4.131	4.090
Total Adjustments	1.838	4.069	-0.052	-0.011
Summary of Adjustments				
Small Business Adjustments	-0.148	0.000	0.000	0.000
BRAC 05 Miti adjustments	0.000	0.000	0.000	0.001
Program adjustments	2.000	2.000	-0.077	-0.085
Congressional Adjustments	-0.014	2.069	0.025	0.073
Subtotal	1.838	4.069	-0.052	-0.011

**C. Other Program Funding Summary: Provided in R-2a.**

**D. Acquisition Strategy: Provided in R-2a.**

**E. Performance Metrics: Provided in R-4.**

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2007</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>		PROGRAM ELEMENT NUMBER AND NAME 0603725N / Facilities Improvement			PROJECT NUMBER AND NAME 0995/ Naval Facilities System			
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	1.435	1.691	1.738	1.800	1.862	1.914	1.946	1.979
RDT&E Articles Quantity	2	0	1	2	TBD	TBD	TBD	TBD

**A. Mission Description and Budget Item Justification:**

(U) This program provides the Navy with new civil engineering capabilities that are required to overcome specific performance limitations of Naval shore facilities while reducing the cost of sustaining the Naval shore infrastructure. The program focuses available resources on satisfying facility requirements where the Navy is a major stakeholder. There are no test validated Commercial Off the Shelf (COTS) solutions available, and a timely solution will not emerge without a Navy sponsored demonstration and validation. The program completes the development and validation of facility technologies originating in Navy Science and Technology programs, plus a variety of other sources which includes the National Science Foundation (NSF) and the National Institute of Standards and Technology (NIST). Validated technologies are implemented in the Navy's Military Construction (MILCON) and Facilities, Sustainment Restoration and Modernization Programs (FSRP). Project 0995 is addressing four Navy facilities requirements during the fiscal years FY 2006 through FY 2009: Waterfront Facilities Repair and Upgrade, Facilities Technologies to Reduce the Cost of Facilities, Sustainment, Restoration and Modernization and Modular Hybrid Pier. The execution of this program is consistent with the findings and recommendation of two National Academy of Sciences Reports: "The Role of Federal Agencies in Fostering New Technology and Innovation in Building" and "Federal Policies to Foster Innovation and Improvement in Constructed Facilities."

(U) WATERFRONT FACILITIES REPAIR AND UPGRADE

(U) Over 75% of the Navy's waterfront facilities are over 45 years old. They were designed for a service life of 25 years and to satisfy the mission requirements existing at that time. The over aged reinforced concrete requires costly and repetitive repairs. In addition, to accomplish more pier side ship maintenance and thus reduce drydock costs, these piers must be strengthened to support concentrated crane loads up to 140 tons when piers were originally designed for no concentrated loads. This sub-project addresses new materials and design methods to extend the service life of existing waterfront facilities by an additional 15 or more years, and conventional concrete patches and composite-enhanced repairs. Other initiatives include; new longer-lasting low maintenance fendering systems that eliminate the need for the frequent replacement of timber piles and fenders; a new Impulse Load Method (ILM) for accurately and quickly determining the vertical load capacity of piers and wharves; and a new Swinging Weight Deflectometer (SWD) technique to determine the lateral stability of piers for earthquake forces and docking ship's impact. Using this new technology at a cost of \$1-2M for repairs and upgrades per pier will result in \$50M in cost avoidance for demolition and replacement.

(U) TECHNOLOGIES TO REDUCE THE COST OF FACILITIES, SUSTAINMENT, RESTORATION AND MODERNIZATION (FSRM)

(U) The costs to correct these critical facility backlog deficiencies are over \$3.1B as reported in the FY 2000 Annual Inspection Summary (AIS). Current Navy FSRM funding levels are insufficient to prevent the continued growth of the backlog of mission and safety critical maintenance and repairs. This effort will demonstrate and validate the cost and reliability of advanced technologies in order to assure their acceptance and implementation in traditionally conservative public works and construction industries. The effort will accelerate the validation, commercialization, and wide-spread implementation of the facility technologies urgently required to reduce the cost of correcting the deficiencies in the Navy's FSRM backlog. Estimated returns on these investments are better than 60 to 1.

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>	PROGRAM ELEMENT NUMBER AND NAME PE0603725N / Facilities Improvement	PROJECT NUMBER AND NAME 0995/ Naval Facilities System
<p>(U) MODULAR HYBRID PIER (MHP)</p> <p>(U) Modular Hybrid Pier started in FY 02 to achieve completions required by construction acquisition schedules.</p> <p>The Navy is faced with the necessity of recapitalizing a large portion of its waterfront infrastructure over the next several decades. The Modular Hybrid Pier initiative develops and validates innovative material and design technologies for a mission-flexible waterfront infrastructure characterized by significantly reduced total ownership cost and increased mission flexibility. The proceeding sub-project Waterfront Facilities Repair and Upgrade will enable the Navy to economically extend the useful service life of existing piers and wharves. While reducing the need for immediate replacement, eventual replacement will be required. This MHP sub-project provides improved technology for new piers. Emerging innovative structural and materials technologies, particularly those that will transition from the Navy's applied research and advanced development program, will provide enhanced-capability. Structures may have a comparable initial cost yet have far less maintenance and repair costs. Use of advanced materials and high performance lightweight concrete will produce structures that have twice the economic service life of the conventional piers. Modular design will enable off-site fabrication in pre-cast plants that will shorten the duration and lower the cost relative to conventional on-site construction. Plant fabrication will vastly improve repair-free durability because of superior quality control and application of high performance concrete and post-tensioning technologies. The modular concept will facilitate change-out of components for modifications to increase or capacity to adapt to future in ship designs. Mobility/relocatability of barge size modules through flotation is a significant new capability option which saves money and provides new military worth. An economic analysis has shown that a modular hybrid (deployable) pier will have a Net Present Value (NPV) cost that is \$15M less over its service life than that for a conventional pier constructed of ordinary reinforced concrete. The MHP will have superior operational benefits to ship/port operations.</p>		

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>	PROGRAM ELEMENT NUMBER AND NAME PE0603725N / Facilities Improvement	PROJECT NUMBER AND NAME 0995 / Naval Facilities System
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**B. Accomplishments/Planned Program**

	FY 06	FY 07	FY 08	FY 09
Waterfront Repair and Upgrade	0.000	0.000	0.100	0.300
RDT&E Articles Quantity	0	0	0	1

FY 06: Work deferred to maximize resources allocated to Modular Hybrid Pier to achieve completion required for construction acquisition.

FY 07: Work deferred to maximize resources allocated to Modular Hybrid Pier to achieve completion required for construction acquisition.

FY 08: Complete validation testing and evaluation of Swinging Weight Deflectometer (new capability) method for determining the remaining strength of piers to resist lateral loads from berthing ships.

FY 09: Initiate testing of high durability waterfront structural systems.

	FY 06	FY 07	FY 08	FY 09
Facilities, Sustainment, Restoration & Modernization	0.000	0.000	0.500	1.000
RDT&E Articles Quantity	0	0	1	1

FY 06: Work deferred to maximize resources allocated to Modular Hybrid Pier to achieve completion required for construction acquisition.

FY 07: Work deferred to maximize resources allocated to Modular Hybrid Pier to achieve completion required for construction acquisition.

FY 08: Complete field (validation) testing of high temperature pavement joint sealants.

FY 09: Complete testing (interim validation) of flexible (non-cracking) marking paint for bituminous airfield pavements. Continue testing of pile encasement to extend life of decomposing concrete. Initiate validation testing of high return-on-investment facilities technologies delivered from ONR FNC: Total Ownership Cost Reduction and other research by private/public sector.

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**B. Accomplishments/Planned Program (Cont.)**

	FY 06	FY 07	FY 08	FY 09
Modular Hybrid Pier	1.435	1.691	1.138	0.500
RDT&E Articles Quantity	2	0	0	0

FY 06: Install and test shore access ramp and support bearings for required strength and rotational/traditional capabilities. Install and test full scale MHP service utility mock-ups at ramp articulation points. Initiate corrosion monitoring and structural tests (DT/OT) on critical subassemblies of demonstration structure (MHP Test Bed). Initiate hydrodynamic modeling of MHP and berthed ships to wakes of passing ships.

FY 07: Complete structural and hydrodynamic tests on demonstration structure. Continue corrosion monitoring. Complete simulation and modeling of response to long period waves (harbor seiche) and to wakes of passing ships. Complete hydrodynamic modeling and simulation of response to hurricane generated wind, wave and current. Revise preliminary design to capture lessons-learned from test article construction, demonstration testing and simulation & modeling. Develop conceptual design for small craft MHP.

FY 08: Test and evaluate performance of 1st prototype MHP.

FY09: Complete test and evaluate of first prototype MHP.

(Exhibit R-2a, Page 4 of 5)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2007</b>
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**C. Other Program Funding Summary:**

<u>Line Item No. &amp; Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	To <u>Complete</u>	Total <u>Cost</u>
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P-1 Procurement Line Item No. & Name. Not applicable.  
C-1 MILCON Project No. & Name. Not applicable.

(U) RELATED RDT&E:

This project transitions waterfront facilities technology from applied research and advanced development programs PE0602234N, Materials, Electronics and Computer Technology, PE0602236N, Warfighter Sustainment Applied Research, and PE0603236N, Warfighter Sustainment Advanced Technology. It also transitions facility technologies developed at universities under the sponsorship of the National Science Foundation (NSF), by the Building and Fire Research Laboratory (BRL) of the National Institute of Standards and Technology (NIST), and by the Construction Engineering Research Laboratories (CERL) and Waterways Experiment Station (WES) of the U. S. Army Engineer Research and Development Center (USAERDC) when they can contribute to the solution of one of the Navy requirements being addressed by this project. The project pursues opportunities to leverage private sector investment through partnerships with private sector organizations, such as the Civil Engineering Research Foundation (CERF), the Marketing Development Alliance (MDA) of Fiberglass Reinforced Plastics Composites Industry and the Strategic Development Council of the American Concrete Institute. The project seeks to leverage and collaborate with the Navy Sustainment, Restoration and efforts including Military Construction.

**D. Acquisition Strategy:**

(U) This project is categorized as Non-ACAT (Non Acquisition). The know-how produced from this project enables the safe and cost effective application of emerging/advanced technology concepts and products: 1) specifying or describing the performance, 2) enabling innovative design applications, 3) enabling quality control/quality assurance during constructions, 4) enabling reliability and maintainability during operations, and 5) developing lifecycle cost projections and environmental sustainability life cycle data for Navy policy guidance and criteria serving the Navy Facilities, Sustainment, Restoration and Modernization and Military Construction (MILCON) programs. The data from this program enables earliest and safe utilization of advanced technology for cost avoidance in the facilities infrastructure. The technical know-how of this program is transferred to the construction industry that delivers Navy construction and maintenance through the inclusion of individual firms (using competitive selection processes) and industry organizations/associations in the development and testing activities. MILCON, Repair and Modernization are not serial production acquisition processes but site specific

**E. Major Performers:**

Major performers include Naval Facilities Engineering Service Center, Port Hueneme, CA. , Berger/Abam Engineers, Federal Way, WA, and Marathon Construction, Lakeside, CA.

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**CONGRESSIONAL PLUS-UPS:**

	FY 06	FY 07	FY 08	FY 09
9859N				
Regenerative Fuel Cell Back-up Power	1.150	1.096	0.000	0.000
RDT&E Articles Quantity	1	1	N/A	N/A

(U) Improve the efficiency and economy of fuel cells in standby power ashore.

	FY 06	FY 07	FY 08	FY 09
9A11N				
Advanced Tech to Reduce Vulnerability of Military Ins	0.000	1.192	0.000	0.000
RDT&E Articles Quantity	N/A	1	N/A	N/A

(U) Accelerate improvements in the security of people and critical defense assets in Navy Region Northwest by adapting, developing, integrating, validating, piloting and accelerating the use of advanced technology solutions. The environmental factors imposed in this area, in addition to the close proximity of civilian communities and commerce, increase the challenges of implementing effective security technology. Existing technologies and emerging technology developments can be the basis for lower cost and more effective solutions not immediately accessible or visible to military planners.

	FY 06	FY 07	FY 08	FY 09
9A12N				
Permanent Magnet Linear Generator Power Buoy Sy	0.000	0.996	0.000	0.000
RDT&E Articles Quantity	N/A	1	N/A	N/A

(U) Demonstrate the performance of a long range night vision device that provides high image resolution for security surveillance in Anti-Terrorism Force Protection Ashore.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-4			PROGRAM ELEMENT PE0603725N / Facilities Improvement			PROJECT NUMBER AND NAME 0995 / Naval Facilities System								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Waterfront Facilities Repair & Upgrade	WX	NFESC, Pt Hueneme, CA	1.760					0.100	10/07	0.300	10/08	nominal varies	cont.	na
	WR	NUWC, New London, CT	0.687										0.687	
	WR	EFANW, Poulsbo, WA	0.012										0.012	
	FP	MCA Engrg, Costa Mesa, CA	0.045										0.045	
Facilities, Sustainment, Restoration and Modernization Tech	WX	NFESC, Pt Hueneme, CA	3.583					0.200	10/07	0.500	10/08	nominal varies	cont.	na
	FP	CERF, Washington, DC	0.045										0.045	
	RC	LANTDIV, Norfolk, VA	0.051										0.051	
	FP	NAS Misawa, Misawa, Japan	0.028										0.028	
	WR	SWDIV, San Diego, CA	0.002										0.002	
	FP	Han Padron Inc., NY	0.019										0.019	
	FP	Atmos Anat. &Consult, Inc.	0.006										0.006	
	RC	N. State Univ. Aberdeen, MD	0.042										0.042	
	WR	PWD, NWS, Charleston, SC	0.081										0.081	
	FP	ADC, Inc.	0.021										0.021	
	FP	Weston Geophysical, MA	0.025										0.025	
	FP	Northwestern Univ., IL	0.024										0.024	
	FP	Blackledge Diving	0.010										0.010	
	FP	ABC Painting, CA	0.032										0.032	
	FP	Polyspec Corp, TX	0.060										0.060	
	FP	Abras. Blast & Coat, CA	0.030										0.030	
MP	U. S. Army Huntsville, AL	0.100										0.100		
RC	Contractors TBD	0.050						0.300	03/08	0.500	03/09	cont.	cont.	
Modular Hybrid Pier	WR	NFESC, Pt Hueneme, CA	1.510	0.764	10/05	0.791	10/06	0.538	10/07	0.300	10/08	nominal varies	cont.	na
	WR	SWDIV, San Diego, CA	0.337										0.337	
	FP	BergerAbam. Seattle, WA	2.308	0.546	05/06	0.800	10/06	0.500	10/07	0.200	10/08		4.354	
	RC	Marathon Const., CA	2.157	0.050	05/06								2.207	
RC	Texas A&M	0.000	0.075	08/06	0.100	03/07	0.100	03/08	0.000					
			13.025	1.435		1.691		1.738		1.800		0.000	19.689	
Remarks: Total Prior Years Cost summation does not include performing activities from projects completed in prior years.														
Development Support													0.000	
Software Development													0.000	
Training Development													0.000	
Integrated Logistics Support													0.000	
Configuration Management													0.000	
Technical Data													0.000	
GFE													0.000	
Award Fees													0.000	
Subtotal Support			0.000			0.000		0.000				0.000	0.000	
Remarks: Included in Product Development costs.														

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Exhibit R-3 Cost Analysis ( page 2 )											DATE: February 2007			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
<b>RD&amp;E, N / BA-4</b>			PE0603725N / Facilities Improvement			0995 / Naval Facilities System								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation														0.000
Operational Test & Evaluation														0.000
Live Fire Test & Evaluation														0.000
Test Assets														0.000
Tooling														0.000
GFE														0.000
Award Fees														0.000
Subtotal T&E			0.000			0.000		0.000		0.000		0.000	0.000	
Remarks: Not applicable.														
Contractor Engineering Support														0.000
Government Engineering Support														0.000
Program Management Support														0.000
Travel														0.000
Labor (Research Personnel)														0.000
SBIR Assessment														0.000
Subtotal Management			0.000			0.000		0.000		0.000		0.000	0.000	0.000
Remarks: Not applicable.														
Total Cost			13.025	1.435		1.691		1.738		1.800		0.000	19.689	
Remarks:														

(Exhibit R-3, page 2 of 2)

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EXHIBIT R4, Schedule Profile																	DATE: February 2007																							
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																									
RDT&E, N / BA-4					PE0603725N / Facilities Improvement										0995 / Naval Facilities System																									
Fiscal Year	2006				2007				2008				2009				2010				2011				2012				2013											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>MHP Acquisition Milestones</b>																																								
MHP Systems Test Bed																																								
MHP System Development																																								
<b>Test &amp; Evaluation Milestones</b>																																								
Development Test																																								
Operational Test																																								
<b>Production Milestones</b>																																								
LRIP (1st MHP) FY 07																																								
FRP FY 09																																								
Deliveries																																								

**R-4 Schedule Profile**

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>	PROGRAM ELEMENT NUMBER AND NAME 0603725N / Facilities Improvement				PROJECT NUMBER AND NAME 3155 Force Protection Ashore			
<b>COST (\$ in Millions)</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>
Project Cost (3155)	<b>4.549</b>	<b>2.488</b>	<b>2.393</b>	<b>2.290</b>	<b>2.210</b>	<b>2.112</b>	<b>2.150</b>	<b>2.185</b>
RDT&E Articles Quantity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p><b>A. Mission Description and Budget Item Justification:</b>            (U) Protection of the Navy Installations against terrorist activities requires development and deployment of advanced technology for force protection capabilities that are cost effective. Manpower costs of protection systems with today's technology are very high . Performance is not adequate to reduce vulnerability cost-effectively. This Antiterrorism and Force Protection Ashore Project will develop, demonstrate and validate technologies for the following: access control and perimeter denial; waterside protection against craft and swimmer intrusion; secure and efficient operations centers and emergency centers (including human and information support systems); construction integrated surveillance sensors and robotic systems for intruder detection; material systems to improve utilities security and recovery; and material concepts to reduce injury and death. Through demonstration and validation of risk modeling and simulation models, the potential of emerging technologies will be evaluated and installation security strategies that reduce manpower and other costs will be formulated. Installation protection concepts against attacks from the air will be identified and jointly demonstrated. These demonstrations and validations derive from advanced technology from science and technology programs of government academia and industry. The technology produces data for performance specifications for competitive procurement. All work will be coordinated with other programs and through industry forums as appropriate.</p>								
Funding:		FY 2006	FY 2007	FY 2008	FY 2009			
Previous President's Budget: (FY 07 Pres Controls)		2.584	2.497	2.408	2.273			
Current DOD Budget (FY08/09 PRESUD Controls)		4.549	2.488	2.393	2.290			
Total Adjustments		1.965	-0.009	-0.015	0.017			
Summary of Adjustments								
Congressional Add (9A11)		2.000						
Congressional and Economic Adjustments		-0.035	-0.009	-0.015	0.017			
Subtotal		1.965	-0.009	-0.015	0.017			

(Exhibit R-2a, Page 1 of 3)

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>	PROGRAM ELEMENT NUMBER AND NAME 0603725N / Facilities Improvement	PROJECT NUMBER AND NAME 3155 Force Protection Ashore

**B. Accomplishments/Planned Program**

	FY 06	FY 07	FY 08	FY 09
	4.549	2.488	2.393	2.290
RDT&E Articles Quantity	N/A	N/A	N/A	N/A

FY 06: Develop, demonstrate and validate the following technologies to improve installation protection and reduce the cost of ATFP operations :

- Complete preliminary demonstration of a transient vehicle & driver document recognition system for access control to Navy bases.
- Develop concepts, based on human systems integration, for fusing ATFP data from multiple sources to enable rapid situational awareness and reduce skills and manning of operations centers.
- Develop modeling applications to enable the economical assessment and optimization of ATFP subsystems in surveillance (detection and assessment), delay (e.g., barriers), and response.
- Develop concepts of layered security defense/protection using available, emerging, and potential technology to overcome current limitations.
- Develop Port Security Barrier systems utilizing composite materials and flexible structural members; and to significantly reduce operational & maintenance costs.
- Develop efficient assessment algorithms for effective blast protection and improved personnel safety in critical structures.

FY 07: Continue with demonstrations and validation of technical solutions to security enhancement and cost reduction of base installations.

- Demonstrate and transition transient vehicle & driver validation system and on-base vehicle/cargo tracking security system.
- Develop and transition user interfaces for presenting the multiple source situational awareness data to monitoring and decision-making personnel in ATFP command centers.
- Demonstrate analytical tools that enable the performance optimization or cost minimization of base security with proposed suites of equipment.
- Demonstrate and transition to design methodologies for perimeter security design that are validated and optimized for reducing base vulnerability. Formulate concepts for future technology based systems for spiral 2 capability.
- Initiate investigation of intelligent imaging systems to include long range EO imaging, artificially illuminated night vision systems and intelligent long range identification and target tracking algorithms.
- Demonstrate effective boat barriers that are easier to transport, deploy and install yet provide cost effective protection.

FY 08: Continue developments and demonstrations of advanced concepts to ATFP problems.

- Integrate situational awareness data among various types of operation centers, and demonstrate reductions in individual skills and crew size of operators while watching standards.
- Demonstrate the effective use of modeling tools to evaluate ATFP advanced components' prototypes within installations protection.
- Demonstrate advanced floating barriers of superior durability, and decrease operating and maintenance costs.
- Validate blast protection algorithms by comparing predicted response with actual field test data.
- Transition from anticipated Science and Technology (S&T) into this program. Potential candidates are: 1) Installation surveillance with intelligent imaging technology, 2) installation protection from swimmers and/or intruders.

FY 09: Continue or complete prior efforts and initiate as follows:

- Spiral 2 systems development for emergency and regional operation centers to enhance efficiency of manpower.
- Development of remote control application of the opening and closing of floating security barriers to reduce operating costs.
- Transition from S&T programs: Development of advanced prototype perimeter security systems using low cost and reliable ground sensors; Demonstration of the integration of advanced, stand-off explosive detection systems at installation entrances, to enhance the safety of personnel; integration of advanced robotic technology to delivery systems in hazardous or post attack scenarios to improve safety and efficiency.

(Exhibit R-2a, Page 2 of 3)

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2007</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>			PROGRAM ELEMENT NUMBER AND NAME 0603725N / Facilities Improvement			PROJECT NUMBER AND NAME 3155 Force Protection Ashore				
<b>C. Other Program Funding Summary:</b>										
<u>Line Item No. &amp; Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To Complete</u>	<u>Total Cost</u>
P-1 Procurement Line item No., Name: 812800 Physical Security Equipment	110.099	110.644	55.405	75.679	75.679	75.534	55.314	28.108	Con't	Con't
C-1 MILCON Project No. & Name. Not applicable.										
(U) RELATED RDT&E:										
<b>D. Acquisition Strategy:</b> Not applicable. Demonstration and validation is conducted for maximum transfer and interaction with industry such as to influence the industry COTS with the results of this demonstration and prototype validation. Acquisition is based on performance specifications enabled by this project.										
<b>E. Major Performers:</b> Naval Surface Warfare Center, Crane IN Naval Facilities Engineering Service Center (NFESC), Port Hueneme, CA Naval Surface Warfare Center (NSWC-DL), Dahlgren, VA Naval Surface Warfare Center (NSWC) Panama City, FL Naval Air Warfare Center (NAWC PAXRIV), Patuxent, MD SPAWAR Systems Center San Diego Ca CA Naval Air Warfare Center (NAWC) China Lake CA										

(Exhibit R-2a, Page 3 of 3)

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**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)											DATE:			
APPROPRIATION/BUDGET ACTIVITY											February 2007			
RDT&E, N / BA-4			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
			PE0603725N / Facilities Improvement				3155 Force Protection Ashore							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total P Y s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Force Protection Ashore	WR	NFESC, Port Hueneme, CA	0.000	1.759	02/06	1.298	10/06	0.983	10/07	1.090	10/08	Cont.	Cont.	
Force Protection Ashore	WR	NSWC Panama City & Dahlgren	0.000	0.190	02/06	0.190	10/06	0.200	11/07	0.200	10/08	Cont.	Cont.	
Force Protection Ashore	WR	NAWC CHINA LAKE	0.000	0.000	02/06	0.000	11/06	0.200	11/07	0.000	10/08	Cont.	Cont.	
Force Protection Ashore	WR	SSC San Diego	0.000	0.400	02/06	0.800	10/06	0.800	11/07	1.000	10/08	Cont.	Cont.	
Force Protection Ashore	WR	Naval Post Graduate School	0.000	0.200	02/06	0.200	11/06	0.210	11/07					
Force Protection Ashore	WX	NFESC, Port Hueneme, CA	0.000	2.000	09/06									
			0.000	4.549		2.488		2.393		2.290		TBD	TBD	
Remarks: New start in FY06.														
Development Support														0.000
Software Development														0.000
Training Development														0.000
Integrated Logistics Support														0.000
Configuration Management														0.000
Technical Data														0.000
GFE														0.000
Award Fees														0.000
Subtotal Support			0.000	0.000		0.000		0.000				0.000	0.000	
Remarks: Included in Product Development costs.														

(Exhibit R-3, page 1 of 2)

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis ( page 2 )										DATE: February 2007				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME								
RDT&E, N / BA-4			PE0603725N / Facilities Improvement			3155 Force Protection Ashore								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	NA													
Operational Test & Evaluation													0.000	
Live Fire Test & Evaluation													0.000	
Test Assets													0.000	
Tooling													0.000	
GFE													0.000	
Award Fees													0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000		0.000	0.000	
Remarks: Not applicable.														
Contractor Engineering Support													0.000	
Government Engineering Support													0.000	
Program Management Support													0.000	
Travel													0.000	
Labor (Research Personnel)													0.000	
SBIR Assessment													0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000	
Remarks: Not applicable.														
Total Cost			0.000	4.549		2.488		2.393		2.290		0.000	0.000	
Remarks:														

(Exhibit R-3, page 2 of 2)

**UNCLASSIFIED**

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2007</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>	PROGRAM ELEMENT NUMBER AND NAME 0603725N / Facilities Improvement	PROJECT NUMBER AND NAME 0995/ Naval Facilities System		
<b>CONGRESSIONAL PLUS-UPS:</b>				
	FY 06	FY 07	FY 08	FY 09
9859N				
Regenerative Fuel Cell Back-up Power	1.150	1.096	0.000	0.000
RDT&E Articles Quantity	1	1	N/A	N/A
(U) Improve the efficiency and economy of fuel cells in standby power ashore.				
	FY 06	FY 07	FY 08	FY 09
9A11N				
Advanced Tech to Reduce Vulnerability of Military Inst	0.000	1.992	0.000	0.000
RDT&E Articles Quantity	N/A	1	N/A	N/A
(U) Accelerate improvements in the security of people and critical defense assets in Navy Region Northwest by adapting, developing, integrating, validating, piloting and accelerating the use of advanced technology solutions. The environmental factors imposed in this area, in addition to the close proximity of civilian communities and commerce, increase the challenges of implementing effective security technology. Existing technologies and emerging technology developments can be the basis for lower cost and more effective solutions not immediately accessible or visible to military planners.				
	FY 06	FY 07	FY 08	FY 09
9A12N				
Permanent Magnet Linear Generator Power Buoy Sys	0.000	0.996	0.000	0.000
RDT&E Articles Quantity	N/A	1	N/A	N/A
(U) Demonstrate the performance of a long range night vision device that provides high image resolution for security surveillance in Anti-Terrorism Force Protection Ashore.				

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