CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						February 2008	
Appropriation/Budget Activity **RDT&E, N BA4**			R-1 Item Nomenclature: 0603725N / Facilities Improvement				
COST ($ in millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	**8.179**	**9.363**	**4.086**	**4.057**	**4.012**	**4.088**	**4.162**
0995 Naval Facilities System	**1.691**	**1.701**	**1.782**	**1.859**	**1.912**	**1.947**	**1.982**
3155 Force Protection Ashore	**2.488**	**2.346**	**2.304**	**2.198**	**2.100**	**2.141**	**2.180**
9999 Congressional Adds	**4.000**	**5.316**					

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 the following Navy facilities requirements during FY 2006 through FY 2009: Advance Technology for Waterfront Facilities Repair and Upgrade, Facilities Technologies t Reduce the Cost of Facilities Sustainment, Restoration and Modernization, and Modular Hybrid Pier for reducing the total ownership cost of future facilities and enable new planning options through relocatable waterfront 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.

EXHIBIT R-2, RDT&E Budget Item Justification				February 2008
Appropriation/Budget Activity **RDT&E,N BA4**	R-1 Item Nomenclature: 0603725N / Facilities Improvement			

B. Program Change Summary:

Funding:	FY 2007	FY 2008	FY 2009
Previous PRES Budget:	8.263	4.131	4.090
Current PRES Budget:	8.179	9.363	4.086
Total Adjustments	-0.084	5.232	-0.004
Summary of Adjustments			
Small Business Adjustments	-0.084	-0.058	0.000
Congressional Adds		5.350	
Congressional Undistributed Reductions	0.000	-0.060	0.000
Navy Working Capital Rate Adjustment	0.000	0.000	-0.004
Subtotal	-0.084	5.232	-0.004

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

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

E. Performance Metrics: Provided in R-4.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						**DATE: February 2008**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT NUMBER AND NAME 0603725N / Facilities Improvement			PROJECT NUMBER AND NAME 0995 / Naval Facilities System			
COST ($ in Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0995 / Naval Facilities System	**1.691**	**1.701**	**1.782**	**1.859**	**1.912**	**1.947**	**1.982**
RDT&E Articles Quantity	**0**	**2**	**1**	**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 2007 throughFY 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: About 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 mus 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): SRM issues of high operational significance are addressed on a priority basis .The costs to correct these critical facility 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		**DATE: February 2008**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0603725N / Facilities Improvement	0995 / Naval Facilities System

(U) MODULAR HYBRID PIER (MHP): Modular Hybrid Pier started in FY 02 to achieve completions required by construction acquisition schedules. 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 of construction and lower the cost relative to conventional on-site demolition followed by on site/on base construction. Plant fabrication will vastly improve quality and result in repair-free durability because of superior performance concrete with post-tensioning technologies. The modular concept will facilitate change-out of components for modifications to increase capacity to adapt to future ship designs. Mobility due to barge configuration will enable relocatability of structural platform modules through flotation is a significant new capability option which will save money and provides new military worth/planning and deployment options. 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, partly because of following the sea levels will have superior operational benefits to ship/port operations. The knowledge from this pier project will enable other concrete facility options that are fabricatable offsite and relocatable for adjustment to basing changes. The technology of concrete and reinforcement and corrosion proofing will have wide spread applicability to all concrete construction.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		**DATE: February 2008**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0603725N / Facilities Improvement	0995 / Naval Facilities System

B. Accomplishments/Planned Program

		FY 07	FY 08	FY 09
Waterfront Repair and Upgrade		0.000	0.100	0.297
RDT&E Articles Quantity		0	1	0

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 sub-systems.

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

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

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

FY 09: Complete testing (interim validation) of flexible (non-cracking) marking paint for bituminous airfield pavements. Continue testing and evaluation of pile encasement to extend life of currently decomposing concrete piles. Initiate validation testing of high return-on-investment facilities/materials technologies from ONR and other science and technology from universities and industry.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		**DATE: February 2008**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT NUMBER AND NAME 0603725N / Facilities Improvement	PROJECT NUMBER AND NAME 0995 / Naval Facilities System

B. Accomplishments/Planned Program (Cont.)

		FY 07	FY 08	FY 09
Modular Hybrid Pier		1.691	1.101	0.485
RDT&E Articles Quantity		0	0	0

FY 07: Initiate 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. Develop conceptual design for small craft MHP.

FY 08: Complete structural and hydrodynamic tests on demonstration structure. Continue corrosion monitoring. Revise preliminary design of prototype MHP to capture lessons-learned from test article construction, demonstration testing and simulation & modeling. Apply MHP technology lessons to other- than- pier floating/relocatable facility options .

FY09: Complete T&E of first prototype MHP.

EXHIBIT R-2a, RDT&E Project Justification		**DATE: February 2008**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT NUMBER AND NAME 0603725N / Facilities Improvement	PROJECT NUMBER AND NAME 0995 / Naval Facilities System

C. Other Program Funding Summary:

Line Item No. & Name	FY 2007	FY 2008	FY 2009	FY2010	FY2011	FY 2012	FY 2013	To Complete	Total Cost

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 construction acquisitions by the construction industry that fundamentally differs from weapons serial production..

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.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1) — **DATE: February 2008**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0603725N / Facilities Improvement	0995 / Naval Facilities System

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			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	2.160	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	WX	NFESC, Pt Hueneme, CA	3.583					0.200	10/07	0.500	10/08	nominal varies	4.283	na
and Modernization Tech	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 Anal. &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.	0.850	
Modular Hybrid Pier	WR	NFESC, Pt Hueneme, CA	2.274			0.756	10/06	0.538	10/07	0.297	10/08	nominal varies	3.865	na
	WR	SWDIV, San Diego, CA	0.337			0.010	10/06						0.347	
	FP	BergerAbam. Seattle, WA	2.854			0.865	02/07	0.463	10/07	0.185	10/08		4.367	
	RC	Marathon Const., CA	2.207										2.207	
	RC	Texas A&M	0.075			0.060	04/07	0.100	03/08	0.000			0.235	
			14.460			1.691		1.701		1.782		0.000	19.634	

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.

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: February 2008

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0603725N / Facilities Improvement	0995 / Naval Facilities System

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s 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	
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	
Remarks: Not applicable.														
Total Cost			14.460			1.691		1.701		1.782		0.000	19.634	
Remarks:														

(Exhibit R-3, page 2 of 2)

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**																PROJECT NUMBER AND NAME 0995 / Naval Facilities System																			
Fiscal Year					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
MHP Acquisition Milestones												MS C						IOC				FRP Dec														
MHP Systems Test Bed																																				
MHP System Development										PDR										CDR																
Test & Evaluation Milestones					DT/OT																															
Development Test																																				
Operational Test																		FOT&E																		
Production Milestones												LRIP I Start																								
LRIP (1st MHP) FY 07																																				
FRP FY 09																						FRP Start														
Deliveries																		LRIP (1)																		

R-4 Schedule Profile

CLASSIFICATION:

Exhibit R-4a, Schedule Detail			**DATE: February 2008**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT 0603725N / Facilities Improvement		PROJECT NUMBER AND NAME 0995 / Naval Facilities System				
Schedule Profile (MHP)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Milestone II (MSII)							
MHP Systems (Test Bed) Development							
Combined Developmental/Operational Testing (DT/OT)	1Q-4Q	1Q-4Q					
Preliminary Design Review (PDR)		2Q					
Milestone C (MS C)		4Q					
Start Low-Rate Initial Production I (LRIP)			1Q				
Low-Rate Initial Production Delivery				2Q			
Follow-On Operational Test & Evaluation (FOT&E)				3Q-4Q			
IOC				3Q			
Critical Design Review (CDR)				4Q			
Full Rate Production (FRP) Decision					1Q		
Full Rate Production Start					2Q		

R-4a Schedule Detail

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							**DATE: February 2008**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT NUMBER AND NAME 0603725N / Facilities Improvement				PROJECT NUMBER AND NAME 3155 Force Protection Ashore			
COST ($ in Millions)		FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
3155 / Force Protection Ashore		**2.488**	**2.346**	**2.304**	**2.198**	**2.100**	**2.141**	**2.180**
RDT&E Articles Quantity		N/A	N/A	N/A	N/A	N/A	N/A	N/A

A. Mission Description and Budget Item Justification:

(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.

EXHIBIT R-2a, RDT&E Project Justification		**DATE: February 2008**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0603725N / Facilities Improvement	3155 Force Protection Ashore

B. Accomplishments/Planned Program

		FY 07	FY 08	FY 09
3155 / Force Protection Ashore		2.488	2.346	2.304
RDT&E Articles Quantity		N/A	N/A	N/A

FY 07: Continue with demonstrations and validation of technical solutions for security enhancement and cost reduction of base installations.
- Demonstrated advanced concept for semi-automating the access control process for transient vehicle & and transient driver .
- Demonstrated advances in modeling for base security solutions.
- Demonstrated rapid design/cost estimating method for perimeter security investments to reduce base vulnerability.
- Demonstrated limited wireless technology application with low light and long range EO imaging for base security
- Demonstrated through full size models the cost effective anti- boat attack barriers to protect piers and berthed ships .
- Completed analytic evaluation of blast prediction and protection technology for buildings.

FY 08: Continue developments and demonstrations of advanced concepts and prototypes to ATFP problems.
- Demonstrate in four different terrains the capability to rapidly estimate (with available GIS data and without laborious ground surveys, perimeter sensor systems to specified security levels.
- Demonstrate for security certification and interoperability over the horizon wireless advanced technology technology
- Develop employment concepts, test bed and test plan for demonstrating advanced sensors capable of seeing under bad weather; to be transitioned in 09 from ONR's Future Navy Capabilities Program.

FY 09: Continue and initiate development and demonstrations as follows.
- Continue development of a multi-perimeter (both outer and inner) enclaves design and estimating tool for security applications to bases.
- Develop and test advanced prototypes of inclement weather sensors for detecting intruders; transitioned from ONR Future Navy Capabilities program.
- Develop advanced prototype models and test Intelligent Video technology transitioned from ONR Future Navy Capabilities program.
- Develop and test advanced prototypes of low frequency continuous wave technology to warn and stop (i.e. neutralize) intruding diver/swimmers approaching Navy piers and ships

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		**DATE: February 2008**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT NUMBER AND NAME 0603725N / Facilities Improvement	PROJECT NUMBER AND NAME 3155 Force Protection Ashore

C. Other Program Funding Summary:

Line Item No. & Name	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
P-1 Procurement Line item No., Name:									
812800 Physical Security Equipment	106.593	53.941	54.607	49.878	49.662	54.364	27.255	Con't	Con't
C-1 MILCON Project No. & Name. Not applicable.									
(U) RELATED RDT&E:									

D. Acquisition Strategy: 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.

E. Major Performers:

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 Post Graduate School, Monterrey, CA
OPTEVFOR, VA
SPAWAR System Center, San Diego, CA
SPAWAR System Center, Charleston, SC

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1) | **DATE: February 2008**

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

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			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			1.873	03/07	0.746	02/08	0.500	10/08	Cont.	Cont	
Force Protection Ashore	WR	NSWC Dahlgren, Panama City, Crane	0.000			0.307	07/07	1.600	03/08	1.200	03/09	Cont.	Cont	
Force Protection Ashore	WR	SSC San Diego, CA	0.000			0.000		0.000		0.604	03/09			
Force Protection Ashore	WR	SSC Charleston, SC	0.000			0.062		0.000		0.000				
Force Protection Ashore	WR	Naval Post Graduate School	0.000			0.180		0.000		0.000		Cont.	Cont	
Force Protection Ashore	WR	OPTEVFOR, VA	0.000			0.067		0.000		0.000		Cont.	Cont	
			0.000			2.488		2.346		2.304		TBD	TBD	

Remarks:
New start in FY06.

Development Support													2.400	
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.

(Exhibit R-3, page 1 of 2)

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2) | **DATE: February 2008**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-4** | PROGRAM ELEMENT: 0603725N / Facilities Improvement | PROJECT NUMBER AND NAME: 3155 Force Protection Ashore

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			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					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	

Remarks: Not applicable.

Total Cost			0.000			2.488		2.346		2.304		0.000	0.000	

Remarks:

(Exhibit R-3, page 2 of 2)

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																			
APPROPRIATION/BUDGET ACTIVITY																																			
RDT&E, N / BA-4																																			
Fiscal Year					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			
Technology Assessment																																			
Concept of Employment																																			
System Development																																			
Spiral 1 Development (LPR)																																			
Spiral 2 Development (TF&I9)																																			
Test & Evaluation Milestones																																			
Development Test																																			
Operational Test																																			
Production Milestones																																			
Procurement Specification																																			
Deliveries																																			

PROJECT NUMBER AND NAME
Proj: 3155 Force Protection Ashore/ Subproj: Commercial Vehicle Access Control

DATE: February 2008

PDR

demo

DT1

R-4 Schedule Profile

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				DATE: February 2008			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT PE0603725N / Facilities Improvement			PROJECT NUMBER AND NAME 3155 / Force Protection Ashore/Subproj: Commercial Vehicle Access Control			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Technology Assessment							
Develop Concept of Employment	1Q						
System Development							
(Spiral 1 - License Plate Reader)	1Q-2Q						
(Spiral 2 - Trip File & I9 Integration)	3Q-4Q						
Preliminary Design Review (PDR)	2Q						
Program terminated after concept demonstration	2Q						

R-4a Schedule Detail

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																
																															DATE: February 2008	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**													PROJECT NUMBER AND NAME Proj: 3155 Force Protection Ashore/ Subproj: Data Fusion																		
Fiscal Year					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
Concept Definition																																
Concept Development																																
Transition Concepts to ATFP C4I																																

R-4 Schedule Profile

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				**DATE: February 2008**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT PE0603725N / Facilities Improvement			PROJECT NUMBER AND NAME 3155 / Force Protection Ashore/Subproj: Data Fusion			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Concept Definition							
Concept Development							
Transition Concept to ATFP C4I	1Q						

R-4a Schedule Detail

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**														PROJECT NUMBER AND NAME Proj: 3155 Force Protection Ashore/ Subproj: Perimeter Security																	
Fiscal Year					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
Technology Assessment																																
Concept Formulation																																
Rapid Assessment Tools																																
Perimeter Security Sensors																																
System Development							PDR																									
Rapid Assessment - Spiral 1												CDR																				
Rapid Assessment - Spiral 2																																
Perimeter Security Sensors																																
Test & Evaluation Milestones																																
Development Test								DT1				DT2																				
Rapid Assessment Tools									DT1																							
Perimeter Security Sensors											DT2																					
Operational Test																																
Perimeter Security Sensors							OT&E 1 (MUA of VPMS)					OT&E 2																					
Production Milestones																																
Procurement Specification																																

R-4 Schedule Profile

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				**DATE: February 2008**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT PE0603725N / Facilities Improvement			PROJECT NUMBER AND NAME 3155 / Force Protection Ashore/Subproj: Perimeter Security			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Technology Assessment							
Concept Formulation - Rapid Assessment Tools (RAT)	2Q-4Q						
Concept Formulation - Perimeter Security Sensors	1Q						
System Development							
(Rapid Assessment Tools - Spiral 1)	1Q-4Q						
(Rapid Assessment Tools - Spiral 2)		1Q-4Q					
(Perimeter Security Sensors)	2Q-4Q	1Q-3Q					
Preliminary Design Review (PDR) - RAT	4Q						
Developmental Test 1 (DT1) - RAT	4Q						
Developmental Test 2 (DT2) - RAT		4Q					
Developmental Test 1 (DT1) - PSS		1Q					
Developmental Test 2 (DT2) - PSS		3Q					
Field Operational I Test & Evaluation 1	3Q						
Field Operational Test & Evaluation (2)		3Q					
Critical Design Review (CDR) Final Assessment		4Q					
Procurement Specification			1Q				

R-4a Schedule Detail

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																			
APPROPRIATION/BUDGET ACTIVITY														PROJECT NUMBER AND NAME																					
RDT&E, N / BA-4														Proj: 3155 Force Protection Ashore/ Subproj: Low Cost Floating Barriers																					
Fiscal Year					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		
Concept Development																																			
System Design				PDR				CDR																											
Prototype Development																																			
Prototype Fabrication																																			
Prototype Installation																																			
Test & Evaluation Milestones							DT1																												
Development Test																																			
Operational Test										OT&E																									
Production Milestones																																			
Procurement Specification																																			
Deliveries																																			

R-4 Schedule Profile

CLASSIFICATION:

Exhibit R-4a, Schedule Detail				**DATE: February 2008**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT PE0603725N / Facilities Improvement			PROJECT NUMBER AND NAME 3155 / Force Protection Ashore/Subproj: Low Cost Floating Barriers			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Concept Development							
System Design							
Prototype System Fabrication	1Q						
Prototype System Installation	2Q						
Preliminary Design Review (PDR)							
Developmental Test 1 (DT1)	2Q-3Q						
Operational Test & Evaluation (OT&E)	4Q						
Critical Design Review (CDR)	4Q						
IOC		1Q					
Procurement Specification		1Q					

R-4a Schedule Detail

CLASSIFICATION:

EXHIBIT R4, Schedule Profile																																		
APPROPRIATION/BUDGET ACTIVITY													PROJECT NUMBER AND NAME																					
RDT&E, N / BA-4													Proj: 3155 Force Protection Ashore/ Subproj: Reduced Cost of Blast Protection																					
Fiscal Year					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		
Technology Assessment																																		
Develop Concept																																		
System Development Refine Blast Mitigation Model																																		
Test & Evaluation Milestones Validate model with existing blast test data								DT1																										
Production Milestones Transition Results to UFC																																		

R-4 Schedule Profile

Exhibit R-4a, Schedule Detail				**DATE: February 2008**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT PE0603725N / Facilities Improvement			PROJECT NUMBER AND NAME 3155 / Force Protection Ashore/Subproj: Reduced Cost of Blast Protection			
Schedule Profile	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Technology Assessment							
Develop Concept							
System Development (Blast Mitigation Model0	1Q-3Q						
Validate model with existing blast test data	4Q						
Procurement Specification	4Q						

R-4a Schedule Detail

EXHIBIT R-2a, RDT&E Project Justification		**DATE: February 2008**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0603725N / Facilities Improvement	9999/Congressional Adds

CONGRESSIONAL PLUS-UPS:

		FY 07	FY 08	FY 09
9859N				
Regenerative Fuel Cell Back-up Power		1.073	0.000	0.000
RDT&E Articles Quantity		1	N/A	N/A

(U) Development and use of energy from sources other than fossil fuels is highly encouraged by our National policy. Fuel Cells are a promising source that is rapidly maturing in efficiency. This Congressional Add provides for field test and evaluation of a regenerative fuel cell system to determine performance and reliability as a back up facility power system.

		FY 07	FY 08	FY 09
9A11N				
Advanced Tech to Reduce Vulnerability of Military Inst		1.950	0.000	0.000
RDT&E Articles Quantity		N/A	N/A	N/A

(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 Congressional add will develop and demonstrate through longevity testing a prototype systems installed at Pacific Northwest Region bases. Two systems are needed: a) Perimeter security system comprised of a range/mixture of advanced sensors that will detect and report intruders entering the base where there is no fencing or the fencing is not effective in detection, alarming and delaying. b) A system to reduce the que waiting time to clear delivery trucks to enter an installation, reduce the manpower, improve/enable the creation of reliable truck data files to contain: driver, truck, trailer, content and inspection search information. Today fences can be breached or jumped in less than a minute and trucks require up to 30 minutes to check through a gate. Excessive guard manpower is required for perimeter and entry point access control. Each system shall be demonstrated at a needy base and extensive data shall be collected. The systems shall be removed after demonstration if shown to be ineffective or unsupportable.

		FY 07	FY 08	FY 09
9A12N				
Permanent Magnet Linear Generator Power Buoy Sys		0.977	0.000	0.000
RDT&E Articles Quantity		1	N/A	N/A

(U) Demonstrate a new concept for converting wave induced motions into electric power using a permanent magnet and linear motions.

EXHIBIT R-2a, RDT&E Project Justification		**DATE: February 2008**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0603725N / Facilities Improvement	9999/Congressional Adds

CONGRESSIONAL PLUS-UPS:

		FY 07	FY 08	FY 09
9999				
Advanced Photovoltaic Material		0.000	0.950	0.000
RDT&E Articles Quantity		N/A	N/A	N/A

(U) Investigate material issues and advanced material opportunities suitable for advanced prototyping development and demonstration to improve the performance of photovoltaics of the categories suitable for Naval facilities applications.

		FY 07	FY 08	FY 09
9999				
Kinetic Hydropower System		0.000	3.200	0.000
RDT&E Articles Quantity		N/A	N/A	N/A

(U) Conduct a technical, operational, environmental and business study to determine the feasibility of generating power at a suitable location in Puget Sound using the Kinetic Hydropower Turbine System, from which power can be transmitted to a local commercial power grid or to a naval base(s) grid. The study, including the explorations for data will address: 1) the presence of suitably strong tidal currents to generate electricity with the kinetic turbines; 2) Proximity of such sites to ports and other infrastructure to facilitate cost effective construction and operational sustainment; 3) Proximity to electrical power grids/interconnections for distribution; 4) Adequate avoidance considerations for navigational Channels; 5) Regulatory and permitting issues; and 6) Environmental compatibility with fish/fisheries, marine mammals, other water uses and other environmental and demographic considerations. The study will conclusively identify all issues to enable effective discussions for agreements among Navy and Industry parties for the project continuation with design, fabrication, installation and demonstration of power generation, transmission, and cost effective power generation-grid operations and business activities to serve the Navy needs. Initiate critical design and tests of long lead components concurrently with the feasibility engineering and business study.

		FY 07	FY 08	FY 09
9999				
Swimmer Detection Sonar		0.000	1.200	0.000
RDT&E Articles Quantity		N/A	N/A	N/A

(U) Develop, install and demonstrate at the Portsmouth, NH Naval Shipyard water environment the Swimmer Detection Sonar Network, previously demonstrated successfully at Singapore and elsewhere. An advanced development prototype will be developed, installed, and tested to demonstrate performance in the temperature, salinity, currents, aqua-life, debris and industria noise regime of the shipyard's waters. Consideration shall be given to installation designs to enable potential continuing development or operation if the fiscal year 2008 activities demonstrate adequate performance.