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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-4 Demonstration/Validation		PROGRAM ELEMENT NUMBER AND NAME 0603851M Non-Lethal Warfare DEM/VAL				PROJECT NUMBER AND NAME C2319 Non-Lethal Weapons Program			
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	28.115	35.095	24.082	26.032	26.450	27.019	27.530	Cont	Cont
RDT&E Articles Qty									

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
 This project covers non-lethal weapon (NLW) systems which are those systems that by their design, do not inflict fatal or permanent injuries. Instead, these systems are designed to stun, incapacitate, or hinder movement of individuals, crowds, or equipment. The availability of NLWs allows commanders less than lethal options, particularly in urban warfare and military operations other than war, i.e., peacekeeping, humanitarian assistance and disaster relief, as well as special operations.

PROGRAM ACCOMPLISHMENTS AND PLANS

FY 2001 Planned Program

- (U) \$ 1.379 Executed and over-saw, administration and support of the Joint NLW Program and technologies database.
- (U) \$ 1.862 Evaluated NLWs by Service warfighting laboratories and Joint Forces Command (JFCOM) for direct user feedback of various NL technologies and munitions.
- (U) \$ 0.891 Initialed modeling and simulation validation and verification of NLW in the Joint Conflict and Tactical Simulation (JCATS) model and performance effects data collection.
- (U) \$ 1.080 Continued pursuit of new technology through open competition of industry, academia and government lab sources for NL capabilities.
- (U) \$ 0.615 66mm NL Grenades – Completed Engineering & Manufacturing Development of 66mm vehicle launched grenades for crowd control and site security missions.
- (U) \$ 0.887 Program Support for each service’s oversight and administration of the Joint NLW Program.
- (U) \$ 0.189 Ground Vehicle Stopper (GVS) –Completed evaluation of several proposed vehicle stopper technologies that have potential to stop/slow ground vehicles.
- (U) \$ 2.000 Continued the non-lethal technology innovation initiative to allow pursuit of new NL materials and technologies.
- (U) \$ 4.536 Vehicle Mounted Active Denial System (VMADS) - Continued evaluation, testing and target assessment of a HMMWV mounted directed energy system.
- (U) \$ 0.513 Running Gear Entanglement System (RGES) – Continued development of a “prop” entanglement capability to stop small, fast moving boats.
- (U) \$ 1.851 Developed and evaluated new RDT&E NLW technology initiatives.
- (U) \$ 1.425 Foams - Continued evaluation, analysis and testing of both rigid and slippery foams and delivery methods/volumes.
- (U) \$ 2.052 Studies and Analysis – Medical and NL casualty data research and collection; human effects assessments; acceptability analysis; and technical studies/analysis of emerging technologies for possible NL application.
- (U) \$ 3.900 Concept Exploration Program – Continued to explore and analyze technical NL solutions for clearing facilities and area denial to personnel, and to initiate the exploration of technical solutions to incapacitate personnel, crowd control, disable vessels, and area denial to vehicles.
- (U) \$ 0.752 Joint Integration Program (JIP) – Continued to select and test commercial products that will meet Joint Services’ requirement for specific NL capability set common items.
- (U) \$ 0.183 40mm NL Crowd Dispersal Cartridge – Complete Engineering & Manufacturing Development of a 40mm sting ball with improved range for the M203 40mm Grenade Launcher.
- (U) \$ 1.000 NL Mortar – Initiated the development and evaluation of NL mortar demonstrators with a frangible or combustible casing.
- (U) \$ 2.000 Initiated an environmental evaluation, impact and safety assessment, technology and remediation capability for NLW candidate systems.
- (U) \$ 1.000 Initiated a comprehensive study of the applicability of NL technology area to Weapons of Mass Destruction (WMD).

(U) Total \$ 28.115

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FY 2002 Planned Program		
<ul style="list-style-type: none"> • (U) \$ 1.630 Execution oversight, administration and support of the Joint NLW Program and technologies database. • (U) \$ 2.657 Evaluation of NLWs by Service warfighting laboratories and Joint Forces Command (JFCOM) for direct user feedback of various NL technologies and munitions. • (U) \$ 0.698 Modeling and simulation of NLWs in the Joint Conflict and Tactical Simulation (JCATS) model and performance effects data collection and to initiate capability set M&S efforts. • (U) \$ 0.446 Continue pursuit of new technology through open competition of industry, academia and government lab sources for NL capabilities. • (U) \$ 0.483 Objective Individual Combat Weapons (OICW) – Initial development of NL munitions for the “next generation” combat weapon that will replace selected M16 Rifles, M4 Carbines and M203 Grenade Launchers. • (U) \$ 1.225 Program Support for each service’s oversight and administration of the Joint NLW Program. • (U) \$ 0.752 NL Mortar – Continue to explore and evaluate a NL mortar demonstrator with a frangible/combustible casing and drag reduction devices. • (U) \$ 0.344 Mk19 NL Munition - Initial development of a NL munition for the 40mm Mk19 Grenade machine gun. • (U) \$ 1.087 Continue the non-lethal technology innovation initiative to allow pursuit of new NL materials and technologies. • (U) \$ 10.800 Active Denial System (ADS) - Continue evaluation, testing and target assessment of a HMMWV mounted directed energy system. • (U) \$ 0.779 Clear Space Device - Initial exploration and evaluation of this CEP down-select on grenade and payload component advanced development • (U) \$ 0.161 Running Gear Entanglement System (RGES) - Complete evaluation of several prop entanglement capabilities. • (U) \$ 1.021 Slippery Substances - Continue evaluation, analysis and testing of slippery foams and delivery methods/volumes. • (U) \$ 4.109 Studies and Analysis – Medical and NL casualty data research and collection; human effects assessments; acceptability analysis; and technical studies/analysis of emerging technologies for possible NL application. • (U) \$ 4.100 Concept Exploration Program – Continue to explore and evaluate technical NL solutions to incapacitate personnel, crowd control, area denial to personnel, vehicles and boats. • (U) \$ 0.430 Joint Integration Program (JIP) – Continue to select and test commercial products that will meet the Joint Services’ requirement for specific NL capability set common items. • (U) \$ 0.800 Conduct and evaluate concepts of employment for current and emerging NL technologies for operational utility within the naval force protection mission. • (U) \$ 0.400 Conduct a study to determine the operational parameters for NLWs beyond small arms range. • (U) \$ 3.173 Pulsed Energy Projectile (PEP) – Explore the development of laser hardware and characterization of target effects. 		
(U) Total \$ 35.095		
(U) FY 2003 Planned Program:		
<ul style="list-style-type: none"> • (U) \$ 1.349 Execution oversight and administration of the Joint NLW Program and technologies database. • (U) \$ 2.000 Evaluation of NLWs by Service warfighting laboratories for direct user feedback of various NL technologies and munitions. • (U) \$ 1.080 Modeling and simulation of NLW in the JCATS model and performance effects data collection and to continue capability sets M&S efforts. • (U) \$ 0.540 Continue pursuit of new technology through open competition of industry, academia and government lab sources for NL capabilities. • (U) \$ 0.432 Objective Individual Combat Weapons (OICW) – Continue development of NL munitions for the “next generation” combat weapon that will replace selected M16 Rifles, M4 Carbines and M203 Grenade Launchers. • (U) \$ 1.102 Program Support for each service’s oversight and administration of the Joint NLW Program. • (U) \$ 0.864 NL Mortars - Continue evaluation of NL mortar demonstrator with a frangible/combustible casing and drag reduction devices. • (U) \$ 5.886 Active Denial System (ADS) - Continue evaluation, testing and target assessment of a HMMWV mounted directed energy system. • (U) \$ 0.906 Mk19 NL Munition - Continue development of a NL munition for the 40mm Mk19 Grenade machine gun. • (U) \$ 1.113 Clear Space Device - Continue to explore and evaluate grenade and payload component advanced development. • (U) \$ 1.080 Slippery Substances - Continue evaluation and testing of slippery foams and delivery methods/volumes. 		

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RDT&E, N /BA-4 Demonstration/Validation		0603851M Non-Lethal Warfare DEM/VAL			C2319 Non-Lethal Weapons Program				
<ul style="list-style-type: none"> • (U) \$ 1.900 Studies and Analysis – Medical and NL casualty data collection; strategic planning; human effects assessments; and technical studies/analysis of emerging technologies for possible NL application. • (U) \$ 3.240 Concept Exploration Program – Continue to explore and develop technical NL solutions for area denial to vehicles, crowd control, disable equipment, and to incapacitate personnel. • (U) \$ 0.430 Joint Integration Program (JIP) – Continue to select and test commercial products that will meet Joint Services’ requirement for specific NL capability set common items. • (U) \$ 2.160 Pulsed Energy Projectile (PEP) -- Continue refinement of bio-effects characterization and optimization of lasers. 									
(U)Total \$ 24.082									
		FY2001	FY2002	FY2003					
(U) FY 2002 President's Budget:		29.309	34.008						
(U) Adjustments from the President's Budget:									
(U) SBIR/STTR Transfer		-0.426							
(U) Execution Adjustment									
(U) Minor Affordability Adjustment			-0.313						
(U) Program Adjustment		-0.768	1.400						
(U) FY 2003 President's Budget:		28.115	35.095	24.082					
CHANGE SUMMARY EXPLANATION:									
(U) Funding: See Above.									
(U) Schedule: Not Applicable.									
(U) Technical: Not Applicable.									
(U) B. OTHER PROGRAM FUNDING SUMMARY:									
<u>Line Item No. & Name</u>		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007 To Compl	Total Cost
(U) PAN,MC BLI 162800, Non-Lethal Munitions		4.446	4.461	5.642	3.833	3.849	3.938	3.463	Continuing
(U) PMC BLI 237100, Operations Other Than War		1.335	1.532	1.531	1.377	1.546	1.574	1.603	Continuing
(U) Related RDT&E: Not Applicable.									
(U) C. ACQUISITION STRATEGY: *									
The JNLWP strategy is to continue to pursue the fielding of NLW systems through modifying COTS products for near term capabilities and the development of new technology NLW systems in various stages of Acquisition. These are balanced with efforts in modeling and simulation, experimentation, and state-of-the-art technology investment. The Acquisition Strategy for each weapon system is largely lead service dependent.									
(U) D. SCHEDULE PROFILE: Not Applicable.									

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Exhibit R-3 Cost Analysis						DATE: February 2002						
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA-4 Demonstration/Validation			PROGRAM ELEMENT 0603851M Non-Lethal Warfare DEM/VAL			PROJECT NUMBER AND NAME C2319 Non-Lethal Weapons Program						
Cost Categories (Tailor to WBS, or System/Iter Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development Support Equip											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Support Cost	WR	MCSC, Quantico, VA	1.957	0.752		0.430		0.432		Continuing	Continuing	
Support Cost	WR	NSWC, Dahlgren, VA	1.265	0.218		0.370		0.370		Continuing	Continuing	
Support Cost	RCP	CTQMSC, Quantico, VA	4.485	0.500	12/00	0.540	12/01	0.440		Continuing	Continuing	
Support Cost	Various	Various	2.957	0.661		0.720		0.485		Continuing	Continuing	
Subtotal Support			10.664	2.131		2.060		1.727		Continuing	Continuing	
Remarks:												
Cost Categories (Tailor to WBS, or System/Iter Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Eval											0.000	
Operational Test & Eval											0.000	
Tooling											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		Continuing	Continuing	
Remarks:												

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Cost Categories (Tailor to WBS, or System/Iter Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Eng Suppt											0.000	
Govt Engineering Suppt											0.000	
Program Mngmnt Suppt											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost				28.115		35.095		24.082		Continuing	Continuing	