Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603609N *I Conventional Munitions*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	277.830	9.249	9.030	8.950	-	8.950	10.825	10.774	9.724	9.076	Continuing	Continuing
0363: *Insensitive Munitions Adv. Development*	277.830	9.249	9.030	5.750	-	5.750	7.425	7.474	7.624	7.776	Continuing	Continuing
0364: *Explosives Safety and Weapons Assessment*	0.000	0.000	0.000	3.200	-	3.200	3.400	3.300	2.100	1.300	Continuing	Continuing

Note

Project 0364 Explosives Safety and Weapons Assessment is a FY 2025 new start.

A. Mission Description and Budget Item Justification

Most Navy munitions react violently when exposed to unplanned stimuli such as fire, shock, and bullet or fragment impact, thus presenting a great hazard to ships, aircraft, and personnel. The Insensitive Munitions Advanced Development (IMAD) program will provide, validate, and transition technology to all new weapon developments and priority weapon systems and enable production of munitions insensitive to these stimuli with no reduction in combat performance. Insensitive Munitions (IM) is the Navy's focused effort on propellants, propulsion units, explosives, warheads, fuses, and pyrotechnics to reduce the severity of cook-off and bullet/ fragment impact reactions, minimizing the probability for sympathetic detonation, both in normal storage and in use, increasing ship and platform survivability and satisfying performance and readiness requirements.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	9.286	9.030	7.270	-	7.270
Current President's Budget	9.249	9.030	8.950	-	8.950
Total Adjustments	-0.037	0.000	1.680	-	1.680
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.037	0.000			
• Program Adjustments	0.000	0.000	1.680	-	1.680
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy	Date: March 2024
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603609N *I Conventional Munitions*

Change Summary Explanation

The change from FY 2025 Previous President's Budget is due to an increase for the establishment of Explosives Safety and Weapons Assessment with a decrease due to minor adjustments.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603609N / *Conventional Munitions*	Project (Number/Name) 0363 / *Insensitive Munitions Adv. Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
0363: *Insensitive Munitions Adv. Development*	277.830	9.249	9.030	5.750	-	5.750	7.425	7.474	7.624	7.776	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Energetic materials producibility is demonstrated to assure national capability to produce and load munitions systems. The program leverages are being closely coordinated with other military departments, North Atlantic Treaty Organization (NATO) and allied countries to eliminate redundant efforts and maximize efficiency. A joint service IM requirement has been developed and through the IM strategic planning process, all Program Executive Offices (PEO) are implementing IM in their priority munitions. IM are identified as a Department of Defense (DoD) critical technology requirement and considered as part of a weapon design. The IMAD program matures the technology developed by a variety of Science and Technology (S&T) sources for program management integration into weapons systems to meet the IM technical deficiencies documented in the PEO IM Strategic Plans. IMAD provides the link between S&T programs and the program managers (PM) by optimizing IM technologies to meet Navy requirements. IMAD offers risk mitigation for the PMs in terms of IM technical knowledge, expertise and manpower with the state of the art expertise across IM products. Each technology area is divided into subtasks addressing specific munition and munition class IM deficiencies.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Insensitive Munitions Adv. Development	9.249	9.030	5.750	0.000	5.750
Articles:	-	-	-	-	-
Description: Validate and assess weapon systems plan of action and milestones for IM compliance. Review Insensitive Munitions Strategic Plan (IMSP) for Navy compile and analyze weapon system, energetic material and generic technology IM test data. Perform Threat Hazard Assessments (THAs). Perform analysis of energetic material properties logistic process. Review IM certification and waivers. Support Insensitive Munitions Council (IMC), Insensitive Munitions Coordination Group (IMCG), and IMC Working Group. Support and develop Insensitive Munitions Technology Tool (IMT2). Support North Atlantic Treaty Organization Standardization Agreement (NATO STANAG) and Advanced Operations (AOP) development. Support IMAD program briefs. Support all Navy Joint Services Insensitive Munitions Technical Panel (JSIMTP) meetings. Support Explosive Safety Working Group (ESWG) meetings. Provide task management support for financial management, review of programmatic deliverables and overall task coordination.					
FY 2024 Plans: Explosive Projects					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603609N / *Conventional Munitions*	**Project (Number/Name)** 0363 / *Insensitive Munitions Adv. Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Effects of Reactive Material (RM) Fragment Impact on High Explosives, WH Heating Rate Study Active Hazard Mitigation Device, Qualification of Fastpack Demolition Explosive FPEX-1, Maturation of test methods across Navy Labs for performance characterization in accordance with AOP-7, Maturation of test methods across Navy Labs for performance characterization in accordance with AOP-7, Molding Powder characterization, Qualification of PBXIH-20 (aka YKT-82Q), Qualification of PBXIH-136MOD, Qualification of PBXIH-21, Maturation of test methods across Navy Labs for performance, IM Assessment of Solid Fuel Ramjet (SFRJ)(NAWCWD China Lake & NSWC Indian Head), Update SWO-010 Navy Qualified Explosives/Propellant Manual. Gun Propulsion Projects High Energy Insensitive Medium Caliber Gun Propellant Formulations, Evaluation of Alternative Energetic Particulate Solids and Energetic Plasticizers in Insensitive Gun Propellant Formulations, Development of Polyvinylnitrate (PVN) for Insensitive Gun Propellant Binder Systems, High-Energy, Low-Erosion Insensitive Solventless Gun Propellant Formulation Development with DANPE Energetic Plasticizer. Propulsion Projects Prop IM Assessment of Solid Fuel Ramjet (SFRJ), High-performance Air-Launched Plateau Burning Reduced Smoke Propellant Motor Demonstration Incorporating Insensitive Munitions Technologies, IM Response of High Energy Density Fuel for Gas Turbine Powered Missile Systems, Additively Manufactured High Order Fractal Foam Insulations for Reduced Propellant Ignition from Impact and Shock, Frangible Port Covers for Venting of Integral Rocket Booster Chambers in Ramjet Applications, Insensitive Munitions Characterization of NWC-480C an Emerging Reduced Smoke Propellant, Nitinol/Ceramic Band to Cut Missile Casing for Slow Cookoff Mitigation, NATO Support, Remote Sensing of SCO Events(NAWCWD China Lake & NSWC Dahlgren), JMEWS FT Warhead Risk Reduction SCO Eval(NAWCWD China Lake & NSWC Dahlgren), IM Assessment of Solid Fuel Ramjet (SFRJ)(NAWCWD China Lake & NSWC Indian Head), Qualification of Fastpack Demolition Explosive FPEX-1(NAWCWD China Lake & NSWC Indian Head), Maturation of test methods across Navy Labs for performance characterization in accordance with AOP-7(NAWCWD China Lake & NSWC Indian Head). Ordnance Projects Shoulder-launched Assault Munitions IM Evaluation (combined effects), Shoulder-launched Assault Munitions IM Evaluation (E8), CNU-405E Container Secondary Cook-off Mitigation Evaluation, Remote Sensing of SCO Events(NAWCWD China Lake & NSWC Dahlgren), JMEWS FT Warhead Risk Reduction SCO Eval(NAWCWD China Lake & NSWC Dahlgren), Shape Memory Alloy Rock Splitting Technology Venting Adaptation(NSWC					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603609N / *Conventional Munitions*	**Project (Number/Name)** 0363 / *Insensitive Munitions Adv. Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Indian Head & NSWC Dahlgren), Mitigation of IM Response using PIMS for CRAW (NSWC Indian Head & NSWC Dahlgren).					
FY 2025 Base Plans: Explosive Projects Evaluate and demonstrate shape memory alloy rock splitting technology for case venting. Qualification of PBXIH-21. Maturation of test methods across Navy Labs for performance characterization in accordance with AOP-7. Develop, characterize, qualify and transition new explosives that have superior vulnerability characteristic, enhanced performance, comparable or lower manufacturing costs. Maintenance of SW010-AG-ORD-010 Navy Qualification of Energetics. Qualification of Fastpack Demolition Explosive (FPEX-1) Gun Propulsion Projects Evaluate and Demonstrate Alternate Energetic materials in Insensitive Gun Propellant Formulations. Develop, demonstrate, and qualify a Reduced Sensitivity Solventless Gun Propellant. Evaluate and Demonstrate High Energy Insensitive Medium Caliber Gun Propellant Formulations. Develop and Demonstrate Gun Propulsion Technology for DON applications. Propulsion Projects Evaluate and demonstrate improved solid propellant for Insensitive Munitions (IM) compliant rocket motor systems and container cook off mitigation. Demonstrate IM Improvement through Integral Rocket Solid Fuel Ramjet Technology. Demonstrate IM Response of High Energy Density Fuel for Gas Turbine Powered Missile Systems. Develop, demonstrate, and qualify new rocket propellant formulations that meet and/or improve system performance for air launched weapons and meet and/or improve IM goals. Develop and Demonstrate Additively Manufactured High Order Fractal Foam Insulations for Reduced Propellant Ignition from Impact. Develop, Demonstrate and Qualify new emergent reduced smoke propellant (NWC-480). Develop and demonstrate venting technology for Integral Rocket Booster Chambers in Ramjet Applications. Demonstrate innovative IM Technologies applied to weapon system propulsion. Ordnance Projects IM Evaluation for Shoulder-launched Assault Munitions LAW FFE (E8, E10). Evaluate Nitinol/Ceramic Band to Cut Missile Casing for Slow Cookoff Mitigation (Joint Project with Propulsion Program). Evaluate new ordnance and container concepts. (Joint Project with Explosives Program). Develop/Demonstrate Ordnance					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603609N / *Conventional Munitions*	**Project (Number/Name)** 0363 / *Insensitive Munitions Adv. Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Technologies including warhead, fuze & component/system level protection systems (Joint Project with Explosives Program). ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The decrease in the amount of $3.28M is due to the anticipated completion of the following efforts: -Develop and demonstrate ballistic barrier concepts to improve or eliminate IM impact threats in logistical transportation and storage conditions -Qualification of PBXIH-136MOD -Evaluation and demonstration of new rocket motor case technology to reduce reaction violence of missile and rocket propulsion systems -Evaluation, demonstration, and qualification of new explosives that reduce collateral damage when bombs are exposed to thermal and impact threats -Development and demonstration of new and improved stowage and container materials that achieve compliance with IM criteria while significantly reducing the logistics footprint by lowering system weight -Evaluation and demonstration of Active Hazard Mitigation Device for reduced slow cook-off response					
Accomplishments/Planned Programs Subtotals	9.249	9.030	5.750	0.000	5.750

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

IMAD is assigned as a non-ACAT program and therefore does not have program milestones like the ACAT I to IV programs. IMAD develops and evaluates IM technologies for use in Navy weapon systems and is not part of a particular weapon acquisition program

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603609N / *Conventional Munitions*	**Project (Number/Name)** 0363 / *Insensitive Munitions Adv. Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PROPULSION DEV. AND EVAL.	WR	NAWC DIV/CHINA LAKE : CA	117.435	3.288	Nov 2022	3.195	Nov 2023	2.000	Nov 2024	-		2.000	Continuing	Continuing	Continuing
EXPLOSIVES DEV. AND EVAL.	WR	NSWC/INDIAN HEAD DIV. : MD	97.321	2.228	Nov 2022	2.615	Nov 2023	1.750	Nov 2024	-		1.750	Continuing	Continuing	Continuing
ORDNANCE DEV. AND EVAL.	WR	NSWC/DAHLGREN : VA	32.043	1.265	Nov 2022	1.083	Nov 2023	0.900	Nov 2024	-		0.900	Continuing	Continuing	Continuing
GUN PROPULSION AND EVAL.	WR	NSWC/INDIAN HEAD DIV. : MD	15.123	1.144	Nov 2022	0.925	Nov 2023	0.500	Nov 2024	-		0.500	Continuing	Continuing	Continuing
		Subtotal	261.922	7.925		7.818		5.150		-		5.150	Continuing	Continuing	N/A

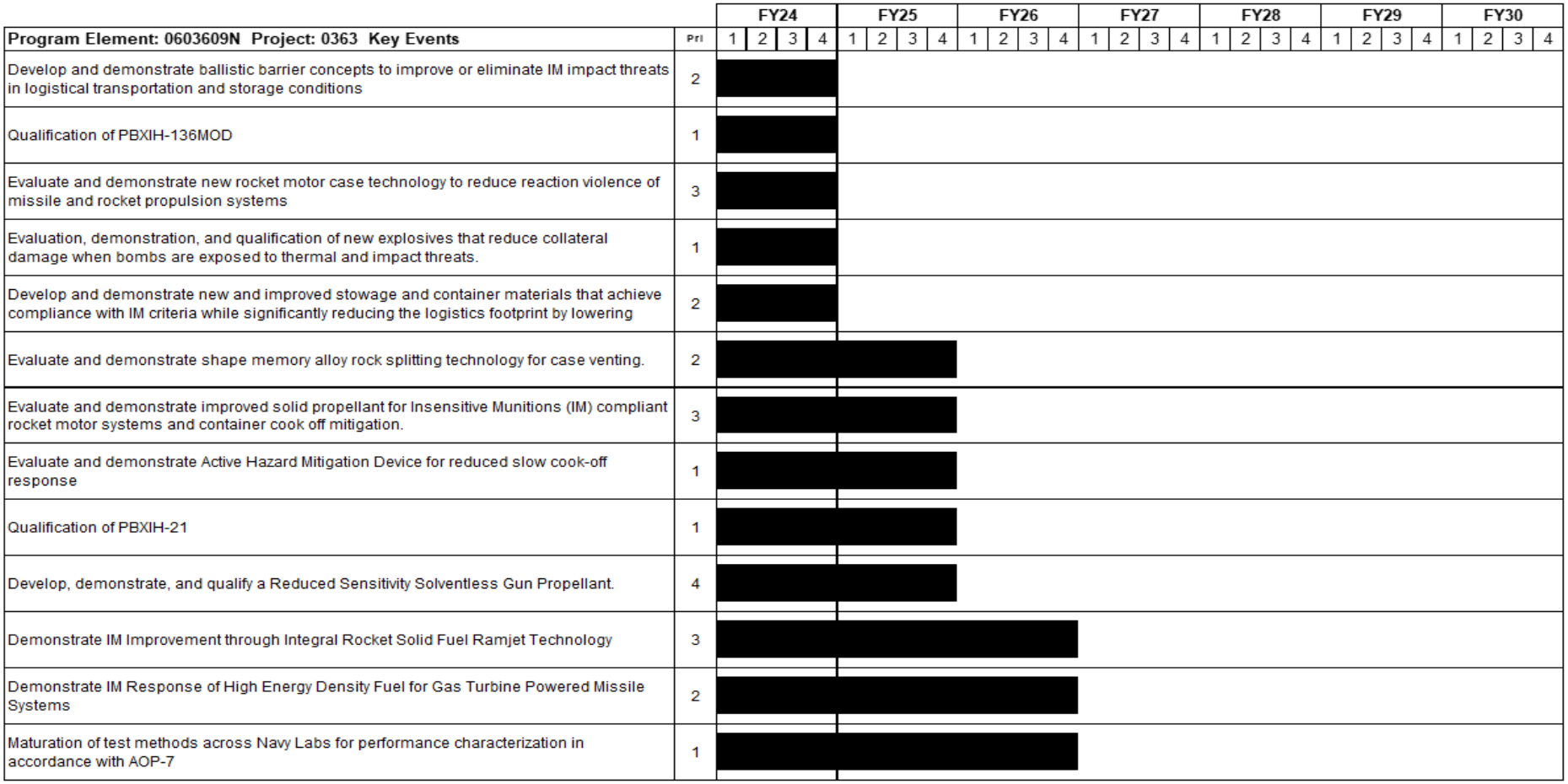
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PROGRAM MANAGEMENT SUPPORT	WR	NOSSA : IN HEAD MD	7.472	0.327	Nov 2022	0.370	Nov 2023	0.300	Nov 2024	-		0.300	Continuing	Continuing	Continuing
PROGRAM MANAGEMENT SUPPORT	MIPR	DTIC : FT BELVOIR VA	8.436	0.997	Nov 2022	0.842	Nov 2023	0.300	Nov 2024	-		0.300	Continuing	Continuing	Continuing
		Subtotal	15.908	1.324		1.212		0.600		-		0.600	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	277.830	9.249		9.030		5.750		-		5.750	Continuing	Continuing	N/A

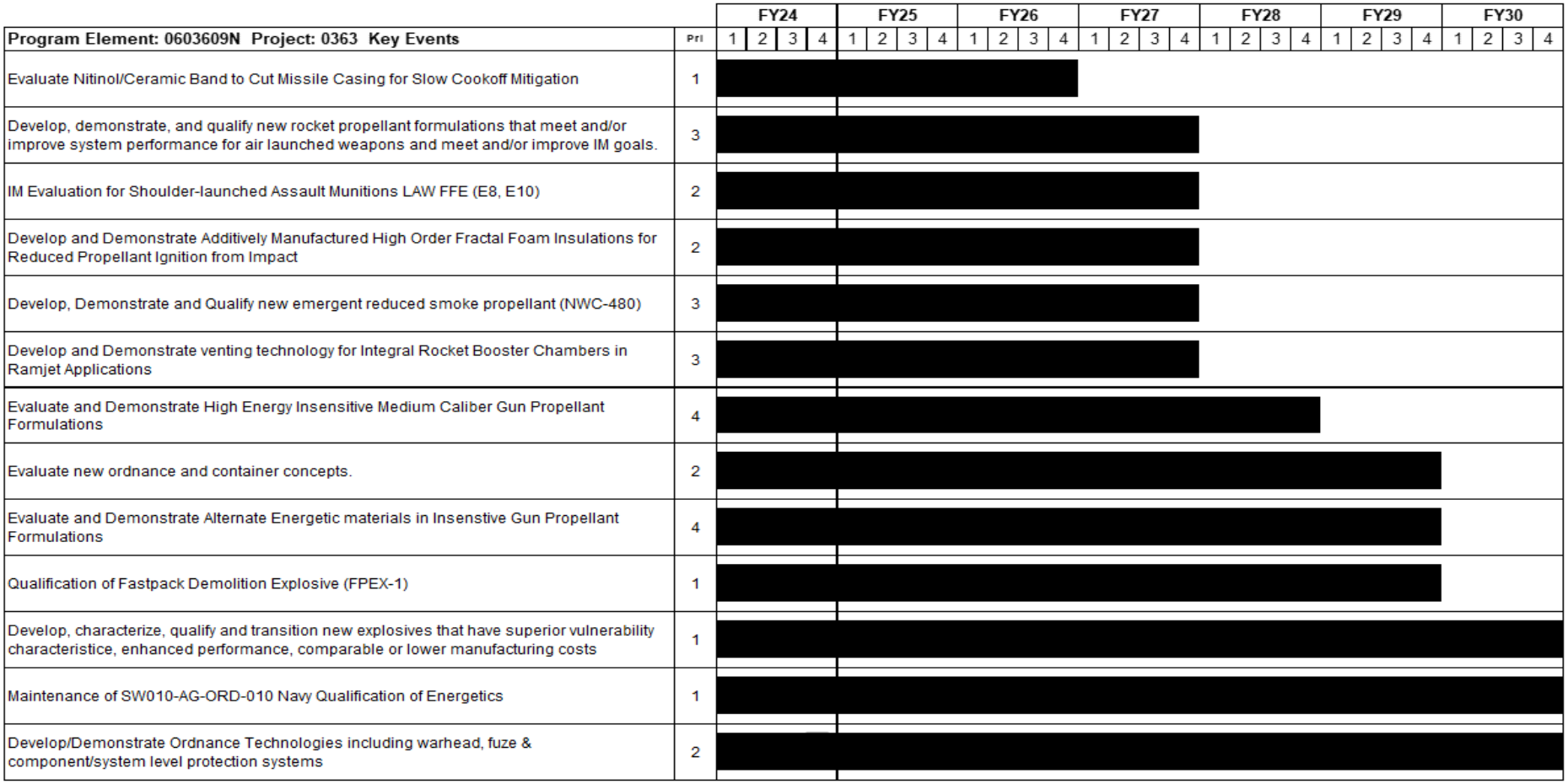
Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603609N / *Conventional Munitions*	**Project (Number/Name)** 0363 / *Insensitive Munitions Adv. Development*



Program Element: 0603609N Project: 0363 Key Events	Pri	FY24				FY25				FY26				FY27				FY28				FY29				FY30			
		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
Develop and demonstrate ballistic barrier concepts to improve or eliminate IM impact threats in logistical transportation and storage conditions	2																												
Qualification of PBXIH-136MOD	1																												
Evaluate and demonstrate new rocket motor case technology to reduce reaction violence of missile and rocket propulsion systems	3																												
Evaluation, demonstration, and qualification of new explosives that reduce collateral damage when bombs are exposed to thermal and impact threats.	1																												
Develop and demonstrate new and improved stowage and container materials that achieve compliance with IM criteria while significantly reducing the logistics footprint by lowering	2																												
Evaluate and demonstrate shape memory alloy rock splitting technology for case venting.	2																												
Evaluate and demonstrate improved solid propellant for Insensitive Munitions (IM) compliant rocket motor systems and container cook off mitigation.	3																												
Evaluate and demonstrate Active Hazard Mitigation Device for reduced slow cook-off response	1																												
Qualification of PBXIH-21	1																												
Develop, demonstrate, and qualify a Reduced Sensitivity Solventless Gun Propellant.	4																												
Demonstrate IM Improvement through Integral Rocket Solid Fuel Ramjet Technology	3																												
Demonstrate IM Response of High Energy Density Fuel for Gas Turbine Powered Missile Systems	2																												
Maturation of test methods across Navy Labs for performance characterization in accordance with AOP-7	1																												

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603609N / *Conventional Munitions*	**Project (Number/Name)** 0363 / *Insensitive Munitions Adv. Development*



Program Element: 0603609N Project: 0363 Key Events	Pri
Evaluate Nitinol/Ceramic Band to Cut Missile Casing for Slow Cookoff Mitigation	1
Develop, demonstrate, and qualify new rocket propellant formulations that meet and/or improve system performance for air launched weapons and meet and/or improve IM goals.	3
IM Evaluation for Shoulder-launched Assault Munitions LAW FFE (E8, E10)	2
Develop and Demonstrate Additively Manufactured High Order Fractal Foam Insulations for Reduced Propellant Ignition from Impact	2
Develop, Demonstrate and Qualify new emergent reduced smoke propellant (NWC-480)	3
Develop and Demonstrate venting technology for Integral Rocket Booster Chambers in Ramjet Applications	3
Evaluate and Demonstrate High Energy Insensitive Medium Caliber Gun Propellant Formulations	4
Evaluate new ordnance and container concepts.	2
Evaluate and Demonstrate Alternate Energetic materials in Insenstive Gun Propellant Formulations	4
Qualification of Fastpack Demolition Explosive (FPEX-1)	1
Develop, characterize, qualify and transition new explosives that have superior vulnerability characteristice, enhanced performance, comparable or lower manufacturing costs	1
Maintenance of SW010-AG-ORD-010 Navy Qualification of Energetics	1
Develop/Demonstrate Ordnance Technologies including warhead, fuze & component/system level protection systems	2

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603609N / *Conventional Munitions*	**Project (Number/Name)** 0363 / *Insensitive Munitions Adv. Development*

Program Element: 0603609N Project: 0363 Key Events	Pri	FY24				FY25				FY26				FY27				FY28				FY29				FY30			
		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
Demonstrate innovative IM Technologies applied to weapon system propulsion	3																												
Develop and Demonstrate Gun Propulsion Technology for DON applications	4																												
Effects of Reactive Material (RM) Fragment Impact on High Explosives	1																												
Development of PolyvinylNitrate (PVN) for Insensitive Gun Propellant Binder Systems	4																												

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603609N / *Conventional Munitions*	**Project (Number/Name)** 0363 / *Insensitive Munitions Adv. Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0363				
Develop and demonstrate ballistic barrier concepts to improve or eliminate IM impact threats in logistical transportation and storage conditions	1	2023	4	2024
Qualification of PBXIH-136MOD	1	2023	4	2024
Evaluate and demonstrate new rocket motor case technology to reduce reaction violence of missile and rocket propulsion systems	1	2023	4	2024
Evaluation, demonstration, and qualification of new explosives that reduce collateral damage when bombs are exposed to thermal and impact threats.	1	2023	4	2024
Develop and demonstrate new and improved stowage and container materials that achieve compliance with IM criteria while significantly reducing the logistics footprint by lowering system weight.	1	2023	4	2024
Evaluate and demonstrate shape memory alloy rock splitting technology for case venting.	1	2023	4	2025
Evaluate and demonstrate improved solid propellant for Insensitive Munitions (IM) compliant rocket motor systems and container cook off mitigation.	1	2023	4	2025
Evaluate and demonstrate Active Hazard Mitigation Device for reduced slow cook-off response	1	2023	4	2025
Qualification of PBXIH-21	1	2023	4	2025
Develop, demonstrate, and qualify a Reduced Sensitivity Solventless Gun Propellant.	1	2023	4	2025
Demonstrate IM Improvement through Integral Rocket Solid Fuel Ramjet Technology	1	2023	4	2026
Demonstrate IM Response of High Energy Density Fuel for Gas Turbine Powered Missile Systems	1	2023	4	2026
Maturation of test methods across Navy Labs for performance characterization in accordance with AOP-7	1	2023	4	2026
Evaluate Nitinol/Ceramic Band to Cut Missile Casing for Slow Cookoff Mitigation	1	2023	4	2026

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603609N / *Conventional Munitions*	**Project (Number/Name)** 0363 / *Insensitive Munitions Adv. Development*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Develop, demonstrate, and qualify new rocket propellant formulations that meet and/or improve system performance for air launched weapons and meet and/or improve IM goals.	1	2023	4	2027
IM Evaluation for Shoulder-launched Assault Munitions LAW FFE (E8, E10)	1	2023	4	2027
Develop and Demonstrate Additively Manufactured High Order Fractal Foam Insulations for Reduced Propellant Ignition from Impact	1	2023	4	2027
Develop, Demonstrate and Qualify new emergent reduced smoke propellant (NWC-480)	1	2023	4	2027
Develop and Demonstrate venting technology for Integral Rocket Booster Chambers in Ramjet Applications	1	2023	4	2027
Evaluate and Demonstrate High Energy Insensitive Medium Caliber Gun Propellant Formulations	1	2023	4	2028
Evaluate new ordnance and container concepts.	1	2023	4	2029
Evaluate and Demonstrate Alternate Energetic materials in Insenstive Gun Propellant Formulations	1	2023	4	2029
Qualification of Fastpack Demolition Explosive (FPEX-1)	1	2023	1	2029
Develop, characterize, qualify and transition new explosives that have superior vulnerability characteristice, enhanced performance, comparable or lower manufacturing costs	1	2023	4	2029
Maintenance of SW010-AG-ORD-010 Navy Qualification of Energetics	1	2023	4	2029
Develop/Demonstrate Ordnance Technologies including warhead, fuze & component/system level protection systems	1	2023	4	2029
Demonstrate innovative IM Technologies applied to weapon system propulsion	1	2023	4	2029
Develop and Demonstrate Gun Propulsion Technology for DON applications	1	2023	4	2029
Effects of Reactive Material (RM) Fragment Impact on High Explosives	1	2023	4	2029
Development of Polyvinylnitrate (PVN) for Insensitive Gun Propellant Binder Systems	1	2024	1	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603609N / *Conventional Munitions*	Project (Number/Name) 0364 / *Explosives Safety and Weapons Assessment*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
0364: *Explosives Safety and Weapons Assessment*	0.000	0.000	0.000	3.200	-	3.200	3.400	3.300	2.100	1.300	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Reduce risk introduced by new weapons systems and technologies that have potential to interfere with ordnance safety and Fleet operations. Emerging radars for all classes of ships introduce a heightened electromagnetic environment (EME) with the likelihood of exceeding the maximum allowable environment (MAE) currently in place. The MAE provides the safety barrier in identifying the electrostatic safety threshold for ordnance items. Exceeding MAE introduces increased risk of inadvertent detonation of electrically primed explosives.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Emerging Radar Modeling and Simulation Development	0.000	0.000	0.600	0.000	0.600
Articles:	-	-	-	-	-
Description: Advancements in emerging radar technology, development of directed energy weapons, and the proliferation of wireless/AIT devices is significantly increasing the fleet operational EME. Evaluating this complex EME requires the development of modeling and simulation (M&S), alternative instrumentation technology, new measuring techniques/equipment, and mm-wave region spectrum research. ***FY 2024 Plans:*** N/A ***FY 2025 Base Plans:*** Develop modeling and simulation of emerging radar to predict, validate, and verify the Hazards of Electromagnetic Radiation to Ordnance (HERO) safety of ship platforms, ordnance systems, and supporting platforms. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 is the first year of funding for this effort.					
Title: Electrostatic Discharge Technical Information Analysis System (ESD TIAS)	0.000	0.000	0.500	0.000	0.500
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603609N / *Conventional Munitions*	**Project (Number/Name)** 0364 / *Explosives Safety and Weapons Assessment*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
FY 2024 Plans: N/A ***FY 2025 Base Plans:*** Develop the Electrostatic Discharge Technical Information Analysis System (ESD TIAS) a platform for ESD information, data, and operational guidance to be disseminated to the fleet for operational safety and acquisition processes. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 is the first year of funding for this effort.					
Title: Insensitive Munitions Fast Cook Off (FCO) Fixtures ***Articles:*** ***FY 2024 Plans:*** N/A ***FY 2025 Base Plans:*** Design and verify large scale fixtures for Fast Cook Off testing associated with Insensitive Munition (IM) testing. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 is the first year of funding for this effort.	0.000 -	0.000 -	1.000 -	0.000 -	1.000 -
Title: Hazards Of Electromagnetic Radiation to Ordnance Measurement Techniques & Hardware ***Articles:*** ***FY 2024 Plans:*** N/A ***FY 2025 Base Plans:***	0.000 -	0.000 -	0.350 -	0.000 -	0.350 -

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603609N / *Conventional Munitions*	**Project (Number/Name)** 0364 / *Explosives Safety and Weapons Assessment*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Research and develop new methodologies, collection techniques, and technology to address fidelity, speed, and capability of HERO instrumentation and survey measurement hardware. New radar technology has rendered HERO instrumentation and survey measurement hardware less efficient. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 is the first year of funding for this effort.					
Title: Hazards Of Electromagnetic Radiation to Ordnance Stimulus & Spectrum Threshold ***Articles:*** ***FY 2024 Plans:*** N/A ***FY 2025 Base Plans:*** Testing the HERO impacts of new transmitter frequencies, which are pushing into the thresholds of HERO Testing, and map the requirements for the additional frequency ranges. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 is the first year of funding for this effort.	0.000 -	0.000 -	0.750 -	0.000 -	0.750 -
Accomplishments/Planned Programs Subtotals	0.000	0.000	3.200	0.000	3.200

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Explosive Saftey and Weapons Assessment is assigned as a non-ACAT program and therefore does not have program milestones like the ACAT I to IV programs. IMAD develops and evaluates IM technologies for use in Navy weapon systems and is not part of a particular weapon acquisition program.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603609N / *Conventional Munitions*	**Project (Number/Name)** 0364 / *Explosives Safety and Weapons Assessment*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HERO EME	WR	NSWC/DAHLGREN : VA	0.000	0.000		0.000		1.500	Nov 2024	-		1.500	Continuing	Continuing	Continuing
ESD/OES	WR	NOSSA : MD	0.000	0.000		0.000		1.700	Nov 2024	-		1.700	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		3.200		-		3.200	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		3.200		-		3.200	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603609N / *Conventional Munitions*	**Project (Number/Name)** 0364 / *Explosives Safety and Weapons Assessment*

Program Element: 0603609N Project: 0364 Key Events	Pri	FY24				FY25				FY26				FY27				FY28				FY29				FY30			
		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
Develop, design, and verify large scale test fixtures for Fast Cook Off testing associated with IM requirements	1					■	■	■	■	■	■	■	■	■	■	■	■												
Investigation and creation of new Hazards of Electromagnetic Radiation to Ordnance (HERO) Maximum Allowable Environments for ordnance due to very high frequency ranged systems	1					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■								
Development of modeling and simulation (M&S) techniques and research related to Hazards of Electromagnetic Radiation to Ordnance (HERO) Emission Control (EMCON)	1					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Develop a fleet usable platform to disseminate electrostatic discharge (ESD) data and certifications	1					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Development of instrumentation and measurement hardware for Hazards of Electromagnetic Radiation to Ordnance (HERO) testing and Radiation Hazard surveys	1					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603609N / *Conventional Munitions*	**Project (Number/Name)** 0364 / *Explosives Safety and Weapons Assessment*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0364				
Develop, design, and verify large scale test fixtures for Fast Cook Off testing associated with IM requirements.	1	2025	4	2027
Investigation and creation of new Hazards of Electromagnetic Radiation to Ordnance (HERO) Maximum Allowable Environments for ordnance due to very high frequency ranged systems.	1	2025	4	2028
Development of modeling and simulation (M&S) techniques and research related to Hazards of Electromagnetic Radiation to Ordnance (HERO) Emission Control (EMCON) certification	1	2025	4	2029
Develop a fleet usable platform to disseminate electrostatic discharge (ESD) data and certifications	1	2025	4	2029
Development of instrumentation and measurement hardware for Hazards of Electromagnetic Radiation to Ordnance (HERO) testing and Radiation Hazard surveys	1	2025	4	2029