Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604804A *I Logistics and Engineer Equipment - Eng Dev*							
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	-	74.150	37.420	41.829	-	41.829	20.677	24.415	13.633	9.962	0.000	222.086
194: *Engine Driven Gen Ed*	-	24.475	12.806	11.865	-	11.865	6.995	3.132	3.207	3.239	0.000	65.719
EJ9: *Maneuver Support Vessel (MSV)*	-	9.383	7.827	15.030	-	15.030	-	-	-	-	0.000	32.240
FG4: *Ultra-Lightweight Camouflage Net System (ULCANS)*	-	5.000	-	-	-	-	-	-	-	-	0.000	5.000
H02: *Tactical Bridging - Engineering Development*	-	8.217	-	-	-	-	-	6.112	3.757	-	0.000	18.086
L39: *Field Sustainment Support Ed*	-	1.780	4.824	8.884	-	8.884	11.331	9.288	3.066	3.096	0.000	42.269
L41: *Water And Petroleum Distribution - Ed*	-	7.632	7.543	2.618	-	2.618	-	-	-	-	0.000	17.793
L46: *Maintenance Support Equipment*	-	0.937	1.306	-	-	-	-	3.507	1.202	1.202	0.000	8.154
L47: *Improved Environmental Control Units Ed*	-	1.473	1.102	1.171	-	1.171	1.171	1.183	1.196	1.208	0.000	8.504
VR7: *Combat Service Support Systems*	-	15.253	2.012	2.261	-	2.261	1.180	1.193	1.205	1.217	0.000	24.321

A. Mission Description and Budget Item Justification

This Program Element (PE) provides system development and demonstration for various projects. This PE includes the development of water craft, military tactical and assault bridging, material handling equipment, construction equipment, engineer support equipment, soldier support equipment (to include shelter systems, environmental control, field service equipment, camouflage systems and aerial delivery equipment), water purification equipment, petroleum distribution equipment, and mobile electric power.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604804A *I Logistics and Engineer Equipment - Eng Dev*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	75.669	37.420	21.475	-	21.475
Current President's Budget	74.150	37.420	41.829	-	41.829
Total Adjustments	-1.519	0.000	20.354	-	20.354
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.001	-			
• SBIR/STTR Transfer	-1.520	-			
• Adjustments to Budget Years	-	-	20.354	-	20.354

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 194: *Engine Driven Gen Ed*		
Congressional Add: *Lightweight Portable Power*	10.000	-
Congressional Add Subtotals for Project: 194	10.000	-
Project: FG4: *Ultra-Lightweight Camouflage Net System (ULCANS)*		
Congressional Add: *Mobile Camouflage Systems (MCS)*	5.000	-
Congressional Add Subtotals for Project: FG4	5.000	-
Project: VR7: *Combat Service Support Systems*		
Congressional Add: *ASF-RWS P3 Expandable- Panelized and Collapsible Shelter (E-PACS)*	12.000	-
Congressional Add Subtotals for Project: VR7	12.000	-
Congressional Add Totals for all Projects	27.000	-

Change Summary Explanation

Increase in FY25 supports the requirements development process for Maneuver Support Vessel Heavy (MSV(H)) for analysis and concept design to address approved requirements as well as the start of the JPADS V4 EMD effort.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*				Project (Number/Name) 194 / *Engine Driven Gen Ed*			
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**
194: *Engine Driven Gen Ed*	-	24.475	12.806	11.865	-	11.865	6.995	3.132	3.207	3.239	0.000	65.719
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is a key enabler for multiple Army Modernization Priorities by providing adaptable and efficient electrical power sources for network modernization, lethality, long range precision fires, and, air & missile defense. The main efforts are integrating standardized power solutions supporting specific programs and modernizations within the CPI2 command post, Soldier power battery charging, and precision fires and air & missile defense systems.

This project supports the Tactical Electric Power (TEP) programs (2kW-800kW Generators and Associated Equip) which is established to develop a modernized, standard family of Mobile Electric Power (MEP) systems to include MEP Generating Sources (MEPGS), MEP Distribution Systems (MEPDS), MEP Storage Systems (MEPSS) and MEP Management Systems (MEPMS) for all Services throughout the Department of Defense IAW DoDI 4120.11. Building on the device/component evaluations conducted in PE 0603804A project G11, this project supports the system development and demonstration of a series of innovative mobile electric power systems that are essential to the development and eventual fielding of modernized MEPGS, MEPMS, MEPSS and MEPDS. This project also supports Army modernization priorities, specifically Combat Support/Combat Service Support (CS/CSS) demands in Network / Command, Control, Communications & Intelligence (C3I), Soldier Lethality, Air & Missile Defense and Long Range Precision Fires, field hospital power, and reduces sustainment requirements.

Power Distribution Illumination Systems Electrical (PDISE) provides reliable, modular designed power distribution equipment that is critical to deploying power networks. PDISE Expansion will add power distribution greater than 60kW and a universal controller that can connect multiple power sources. The Prime Power Distribution Systems (PPDS) effort will fulfill prime power (medium voltage, 4160 Volts Alternating Current (VAC)) distribution shortfalls to support 249th Engineer Battalion (Prime Power) and Force Provider Expeditionary (FPE) requirements. PPDS will provide modernized power distribution capabilities for the U.S. Army Deployable Power Generation and Distribution System (DPGDS), the FPE Prime Power Connection Kit (PPCK), and the U.S. Air Force Basic Expeditionary Airfield Resources (BEAR) power systems. The PPDS will incorporate advanced capabilities and include three primary components: an improved Primary Switching Center (iPSC), secondly, an improved Secondary Distribution Center (iSDC), and last, a Tactical Prime Power Transformer (TPPT). The Universal Power Gateway (comprised of a Universal Power Electronic Secondary Controller and advanced energy storage) will enable a seamless alternating current/direct current (AC/DC) power grid to connect multiple sources (generator, energy storage, vehicle power, renewable), giving the warfighter maximum operational flexibility, greater operational reliability, and reduced logistics footprint.

STEP is a modernization program for existing legacy small power generation systems, that will provide expeditionary, durable and reliable tactical electric power capabilities less than 5kW, to support operations in the austere environments of today's battlefield. The STEP program is a critical enabler to the Army modernization priorities under Army Futures Command Soldier Lethality Cross Functional Team (CFT) and Network CFT. It will provide battery charging power sources for Soldier borne sensors, lasers and optics.

The Hybrid AMMPS Power Source (HAPS), renamed from Integrated Fire Control Network (IFCN) in FY 2024, activities include the development and integration a 10kW bi-directional power converter to include the integration of 6T format Lithium Ion (Li-Ion) batteries on a IFCN platform system.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

The U.S Army field hospital configurations require a modernized power generator and distribution system to support medical operations in large scale ground combat operations (LSGCO). Based on the Army's modernized field hospital and recently fielded next generation computed tomography (CT) systems, the current Modified Table of Organization and Equipment (MTOE) authorization of 100kw Tactical Quiet Generators (TQGs) are insufficient to meet the operational power demands for the 148-bed configuration.

FY 2025 funds will support prototyping and engineering, manufacturing and development efforts for the STEP 3kW and PDISE Expansion power distribution solution.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Power Distribution Illumination Systems Electrical (PDISE) expansion	2.500	0.127	2.000
Description: Prepare PDISE Expansion - Prime effort by awarding the Prime Power Distribution Systems (PPDS) contract, developing first article build/test (FAT) components and start developmental testing inclusive of the Improved Primary Switching Center (iPSC), Improved Secondary Distribution Center (iSDC), and Tactical Prime Power Transformer (TPPT). The PPDS enables distribution of power from prime power sources which use medium voltages or higher. The system will transform medium or higher voltages down to standard 120/208 V, 3-phase power. Elements of the PPDS will enhance the existing PSC and SDC by incorporating advanced capabilities to accept either 4160 Volts Alternating Current (VAC) primary input power from a USA Deployable Power Generation and Distribution System (DPGDS) or a USAF Basic Expeditionary Airfield Resources (BEAR) power source or 13.8kVAC from contracted and commercial power sources or host nation/existing distribution systems. Prime Power Connection Kit (PPCK) effort renamed to Prime Power Distribution Systems (PPDS) in FY24.			
FY 2024 Plans: PPCK First Article Test build.			
FY 2025 Plans: Prime effort would be continuing the Prime Power Distribution Systems (PPDS), developing first article build/test (FAT) components and start developmental testing inclusive of the Improved Primary Switching Center (iPSC), Improved Secondary Distribution Center (iSDC), and Tactical Prime Power Transformer (TPPT).			
FY 2024 to FY 2025 Increase/Decrease Statement: The increase in FY2025 is to accomplish PPDS First Article Test at Aberdeen Test Center (ATC).			
Title: Field Hospital Microgrid Systems	-	0.500	-
Description: The effort will develop and integrate a 120kw microgrid power system onto a 5-ton trailer platform. This modernization effort will provide the necessary power requirements to meet all the medical healthcare operations of the newly modernized 148-bed field hospital.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY24 funds will support the platform engineering design and integration effort, engineering and logistics documentation, developmental testing activities, transportability testing, safety assessment, and operational assessment. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Reduction accounts for the efforts (e.g. documentation, testing) supporting the medical Microgrid System will be completed in FY 2024.			
Title: STEP ***Description:*** The Small Tactical Electrical Power (STEP) is a modernization program for existing legacy 2kW and 3kW systems, that will provide small tactical electric power capabilities less than 5-Kilowatts (<5kW), and is durable and reliable, in order to operate in the austere environments of today's battlefield. The STEP program will consist of two major lines of effort providing three distinct power generating and power storage capabilities. These systems will be approached along lines of effort that associate with each system; STEP Lightweight (STEP-LW) and STEP 3kW will provide power generation and the STEP Hybrid Augmentation Systems (STEP HAS) will be an add-on for both systems that will provide energy storage. The STEP program is a critical enabler to the Army modernization priorities under Army Futures Command Soldier Lethality Cross Function Team (CFT) and Network CFT. It will be power sources for Soldier borne sensors, lasers and optics. ***FY 2024 Plans:*** FY24 funds will support the continuation of the STEP 3kW. ***FY 2025 Plans:*** FY25 funds support the continuation of the STEP 3kW development contract. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease in funds due to prototype design completion and build initiation in FY24.	10.939	11.100	9.865
Title: IFCN Effort ***Description:*** The effort will develop and integrate an advanced hybrid power solution for the AMMPS generators to initially support operation of the Integrated Fire Control Network (IFCN) Relay. Primary effort will include development and integration of a 10kW bi-directional power converter, integration of 6T format Lithium Ion (Li-Ion) batteries and development of a hybrid power architecture design that will provide IFCN a full range of AC and DC power. The bi-directional power converter will supply AC and DC power, provide AC transfer switch functions and charge Li-Ion batteries. IFCN effort renamed to Hybrid AMMPS Power Source (HAPS) in FY24. ***FY 2024 Plans:***	1.036	1.079	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY24 funds will continue to support prototype development and complete testing. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** This RDTE effort will be complete in FY 2024.			
Accomplishments/Planned Programs Subtotals	14.475	12.806	11.865

	FY 2023	FY 2024
Congressional Add: Lightweight Portable Power	10.000	-
FY 2023 Accomplishments: FY23 Congressional funds to be executed on the prototyping and test and evaluation of lightweight, portable power systems.		
Congressional Adds Subtotals	10.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• G11: *Adv Elec Energy Con Ad*	15.000	-	0.000	-	0.000	-	-	-	-	0.000	15.000
• MA9800: *Generators And Associated Equip*	112.689	78.364	81.540	-	81.540	83.041	96.266	95.808	96.091	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Small Tactical Electric Power (STEP) program is a modernization program that will provide a family of systems of improved mobile Tactical Electric Power (TEP) sources and will replace the legacy 2kilowatt (kW) Military Tactical Generator (MTG) and the 3kW Tactical Quiet Generator (TQG). STEP models will be lightweight, modular, reliable, and more logistically supportable power sources than their predecessors for the Department of Defense's (DoD) 21st Century digitized forces.

The acquisition for STEP will incorporate Joint service requirements to reduce cost, maximize interoperability and increase performance over existing generator systems. STEP will implement separate lines of effort. Due to the recent change to requirements based on the Feb 23 approval of the STEP Capability Development Document (CDD), phasing of the lines of effort have changed. The STEP 3kW entered development in 2QFY23. The STEP LW prototype testing in FY22 determined that the current solution was not viable for long-term sustainment. However, opportunities for engineering, manufacturing, and development exist and the STEP LW may enter the acquisition lifecycle at MS B in 1QFY27. STEP Hybrid Augmentation Systems (STEP HAS) will begin development in 1QFY28.

PDISE is a family of power distribution and illumination equipment that transmits electrical power from mobile generation equipment to the end users in a field environment. Power Distribution Illumination Systems Electrical (PDISE) provides the linkage between the generators and the Network/C3I, Air & Missile Defense,

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

Long Range Precision Fires, Command Post and Combat Support/Combat Service Support systems, Command Post Integrated Infrastructure (CPI2) and Towable Expeditionary Shelter System (TESS), and AMMPS Microgrid MG-5206 120kW for Army Field Hospitals. PDISE Expansion - Prime is the Prime Power Distribution Systems (PPDS) inclusive of the Improved Primary Switching Center (iPSC), Improved Secondary Distribution Center (iSDC), and Tactical Prime Power Transformer (TPPT). The contracting strategy is a 10-year Firm-Fixed Price (FFP) contract in 3QFY24 that will include a 24-month first article build/test phase and 96-month production options. PPDS will develop a materiel solution to support Army Prime Power for the 249th Engineer Battalion (Prime Power) as well as Force Provider Expeditionary Prime Power Connection Kit (PPCK). contingency-base operations. The contract includes the research, design, manufacturing, and delivery of first articles to support testing scheduled in 3QFY25. First article testing will be completed no later than 2QYF26 with follow-on operational assessment starting in 2QFY26.

The acquisition strategy for the Hybrid AMMPS Power Source (HAPS) includes a 22-month Other Transaction Authority (OTA), Firmed-Fixed Price (FFP) developmental contract that will develop a prototype bi-directional power converter and prototype Li-Ion six terminal (6T) format battery module that will support a wide application of requirements. The objective of this effort is to develop and conduct testing activities on a prototype power converter that will accept alternating current (AC) input power from the Advanced Medium Mobile Power Source (AMMPS) 10 kilowatt (kW), 5kW and other Department of Defense (DoD) generator sets and direct current (DC) input from sources that include but are not limited to DoD batteries, NATO slave ports, and other commonly used DoD 28 Volt Direct Current (VDC) power sources.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) 194 / *Engine Driven Gen Ed*	

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
PDISE Expansion (PPDS)	Various	PM E2S2 : Ft. Belvoir	1.275	-		-		0.350	Jan 2025	-		0.350	Continuing	Continuing	Continuing
STEP	MIPR	DEVCOM RTI : PM E2S2 Ft. Belvior	3.204	1.960	Jan 2023	0.656	Jan 2024	0.860	Jan 2025	-		0.860	0.000	6.680	-
HAPS (AMMPS)	C/FFP	PM E2S2 Ft. Belvoir : PM E2S2 Ft. Belvoir	-	0.168	Apr 2023	-		-		-		-	0.000	0.168	-
		Subtotal	4.479	2.128		0.656		1.210		-		1.210	Continuing	Continuing	N/A

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
STEP	C/FFP	Prototyping and engineering, manufacturing and development efforts : HDT Global, AL; MLS, CA; and P2MS, MO	5.600	8.133	Jun 2023	10.092	Mar 2024	2.800	Jan 2025	-		2.800	0.000	26.625	-
PDISE Expansion (PPDS)	TBD	Prototyping and engineering, manufacturing and development efforts : TBD	-	0.042	Dec 2023	0.127	Apr 2024	0.350	Feb 2025	-		0.350	0.000	0.519	-
Field Hospital Microgrid Integration	MIPR	DEVCOM RTI : Ft. Belvoir	-	-		0.500	Jun 2024	-		-		-	0.000	0.500	-
Lightweight Portable Power	TBD	Enginuity Power Systems (MI, VA) : West Virginia University (WV)	-	10.000	Jul 2023	-		-		-		-	0.000	10.000	-
HAPS (AMMPS)	C/FFP	PM E2S2 Ft. Belvoir : PM E2S2 Ft. Belvoir	-	0.775	Apr 2023	-		-		-		-	0.000	0.775	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) 194 / *Engine Driven Gen Ed*	

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
		Subtotal	5.600	18.950		10.719		3.150		-		3.150	0.000	38.419	N/A

Support ($ 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
HAPS (AMMPS)	C/FFP	PM E2S2 Ft. Belvoir : PM E2S2 Ft. Belvoir	0.686	0.112	Jun 2023	1.079	Oct 2023	-		-		-	0.000	1.877	-
STEP	C/FFP	Various : PM E2S2 Ft. Belvoir	0.706	-		0.210	Jan 2024	0.500	Jan 2025	-		0.500	0.000	1.416	-
PDISE Expansion	Various	PM E2S2 : Ft. Belvoir	-	-		-		0.300	Jan 2025	-		0.300	0.000	0.300	-
		Subtotal	1.392	0.112		1.289		0.800		-		0.800	0.000	3.593	N/A

Test and Evaluation ($ 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
STEP	MIPR	ATC : Aberdeen, MD	-	0.855	Jul 2023	0.142	Jan 2024	5.705	Jan 2025	-		5.705	0.000	6.702	-
HAPS (AMMPS)	C/FFP	ATC : Aberdeen, MD	-	2.430	Aug 2023	-		-		-		-	0.000	2.430	-
PDISE Expansion (PPDS)	TBD	ATC : ATC	-	-		-		1.000	Apr 2025	-		1.000	0.000	1.000	-
		Subtotal	-	3.285		0.142		6.705		-		6.705	0.000	10.132	N/A

	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
Project Cost Totals	11.471	24.475		12.806		11.865		-		11.865	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

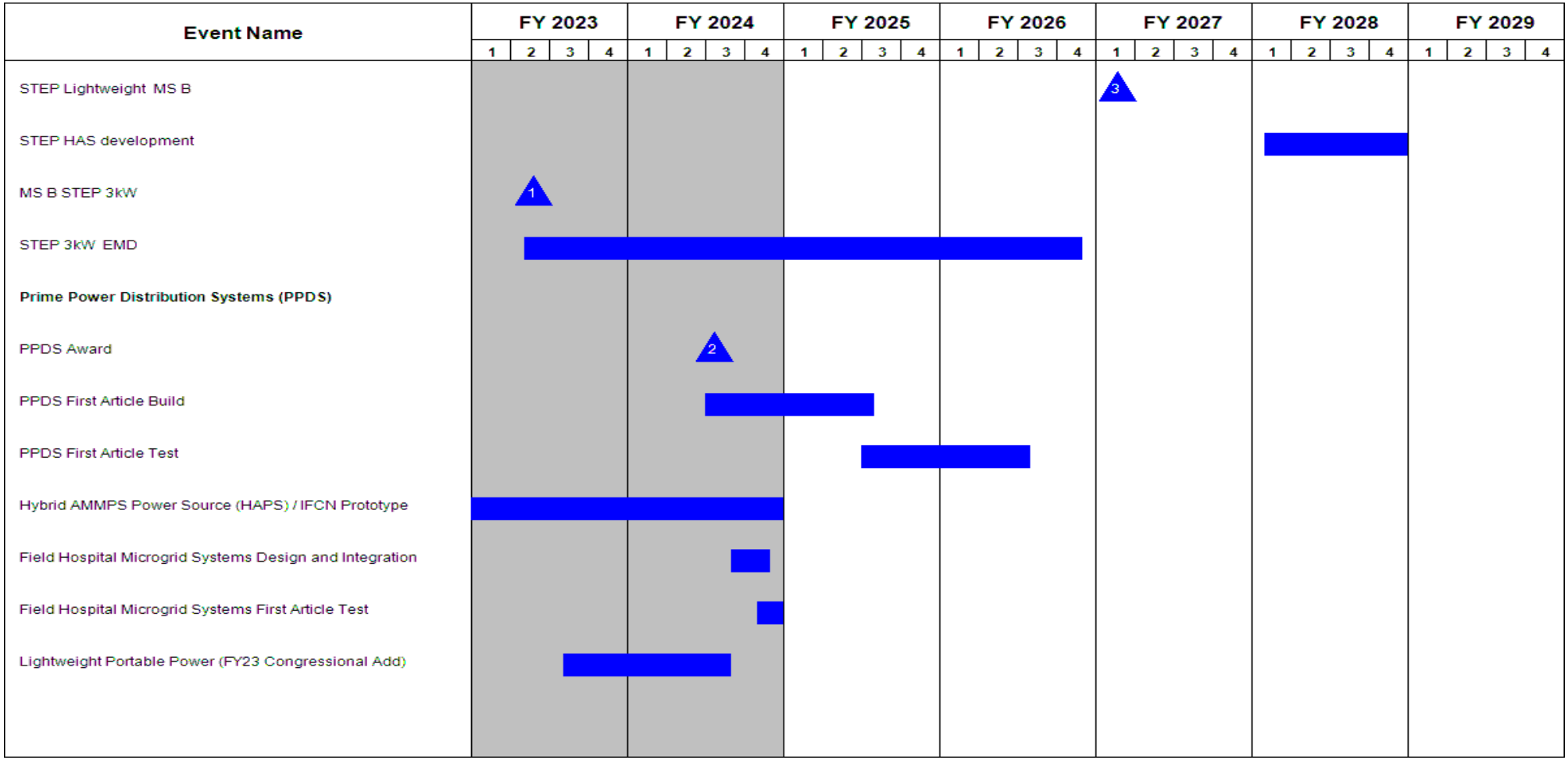


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
STEP Lightweight MS B	1	2027	1	2027
STEP HAS development	1	2028	4	2028
MS B STEP 3kW	2	2023	2	2023
STEP 3kW EMD	2	2023	4	2026
Prime Power Distribution Systems (PPDS)	3	2021	4	2029
PPDS Award	3	2024	3	2024
PPDS First Article Build	3	2024	3	2025
PPDS First Article Test	3	2025	3	2026
Hybrid AMMPS Power Source (HAPS) / IFCN Prototype	2	2021	4	2024
Field Hospital Microgrid Systems Design and Integration	3	2024	4	2024
Field Hospital Microgrid Systems First Article Test	4	2024	4	2024
Lightweight Portable Power (FY23 Congressional Add)	3	2023	3	2024

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*				Project (Number/Name) EJ9 / *Maneuver Support Vessel (MSV)*			
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**
EJ9: *Maneuver Support Vessel (MSV)*	-	9.383	7.827	15.030	-	15.030	-	-	-	-	0.000	32.240
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project line supports the family of Maneuver Support Vessels (MSV) which enable Dynamic Force Repositioning (DFR) by providing the Combatant, Multi-Domain Operations (MDO) and Joint All Domain Operations (JADO) Commanders with the ability to access multiple entry points via littorals and inland waterways (waterborne corridor) IOT sustain forces within an anti-access/area denial (A2/AD) bubble. The family of MSV include the Maneuver Support Vessel (Light), Maneuver Support Vessel (Heavy), and other systems and enablers which support INDOPACOM operational plans and Army Title 10 requirements to prepare for land combat and provide watercraft support in a theater of operations in support of Geographic Combatant Commands (GCC). MSV connectors will provide Surge, Precision and Dispersed Logistics to move and maneuver tailored forces, combat ready troops, platforms, equipment, and supply bulk fuel and water across the full spectrum of operations. MSV connectors mitigate A2/AD threats by providing access to shallow coastal waters, rivers, in narrow inland waterways in support of dispersed force elements in austere environments and where mature ports or road networks are unavailable.

The MSV(L) provides upgraded capabilities such as higher operational speed, reduced draft and increased payload to support expeditionary movement and maneuver of tailored forces and combat power to mitigate the Anti-Access/Area Denial (A2/AD) operational environment. Capable of delivering a combat configured Abrams, Stryker or Bradley Fighting Vehicles along with critical sustainment missions including delivery of food, water, fuel, and ammunition. MSV(L) is the first new development program which will displace the Army's aging Landing Craft Mechanized-8 (LCM-8) class of vessels. The LCM-8 does not have the speed, functional draft (shallow water capability), interoperability, or maneuver capability to move today's Army Maneuver Platforms.

The MSV(L) prototype will undergo contractor and government testing in FY23-25. Following prototype testing the prototype vessel may be used as a test bench for future modifications and or a training asset.

The MSV(H) represents a new development of maritime transport, adding new capabilities to meet the joint formation's future operational and tactical movement and maneuver requirements. MSV(H) is in line with future joint and Army Operational Concepts stating that Army forces must conduct expeditionary movement over strategic distances and transition rapidly to cross-domain maneuver of sufficient scale and duration to accomplish operational objectives. This heavy lift capability enables intra-theater movement and maneuver of combat loaded, ready-to-fight forces (personnel, equipment, and supplies) in support of CCMDs. MSV(H) is interoperable with future joint sea basing concepts and designed with the right range, speed, and cargo capacity to employ combat power to multiple dispersed locations and project sustainment from intermediate staging bases or the sea base. The strategically dispersed and forward deployed MSV(H) fleet enables rapid and responsive theater employment of combat loaded, ready-to-fight forces (personnel, equipment, and accompanying supplies) in support of CCMDs, employ them at the point of need, provide tactical maneuver support during operations, and sustain them over the duration of operations. MSV(H) capabilities are a critical enabler in combatting A2/AD environment threats made more difficult by operating in the littoral operating space physically defined by natural choke points along rivers, in shallows, jutting peninsulas, offshore islands, bays, estuaries, coastlines and vessel-congested shipping areas.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Maneuver Support Vessel (MSV)*

The family of MSV will also include interim capabilities and enablers to facilitate the range of pulsed operations in the littorals. FY25 RDTE dollars in the amount of $15.030 million support the family of Maneuver Support Vessels requirements development process and MSV(L) testing.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Program Management / Systems Engineering	0.695	0.723	1.800
Description: PM/Matrix Support includes PM and systems engineering oversight required to manage the program and provide contractor oversight. ***FY 2024 Plans:*** Funds matrix support, travel, and general oversight efforts. ***FY 2025 Plans:*** Funds matrix support, travel, and general oversight efforts. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 increase is due to additional support needed for studies to inform requirements development of the MSV(H) Program			
Title: Maneuver Support Vessel Affordability and Feasibility Studies	1.688	1.457	2.730
Description: Conduct Affordability and Feasibility Studies for future watercraft modernization. ***FY 2024 Plans:*** Conduct analysis development to complete affordability and feasibility studies. ***FY 2025 Plans:*** Increase in affordability and feasibility studies. ie Signatures Knowledge Studies ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY2025 increase to provide for additional feasibility and affordability studies for family of MSV			
Title: MSV(H) Requirements Development	-	5.647	5.500
Description: Collaborative effort with Industry and Government analyzing trade space to inform A-CDD desired characteristics ***FY 2024 Plans:*** Funding supports MSV(H) requirements development process with analysis of A-CDD desired characteristics. ***FY 2025 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Maneuver Support Vessel (MSV)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Funding to support additional family of MSV requirements development process with analysis of A-CDD desired characteristics and accompanying tradeoff analysis. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY2025 decrease to support additional family of MSV requirements development process with analysis of A-CDD desired characteristics and accompanying tradeoff analysis to reduce development risk.			
Title: MSV(L) EMD Closeout ***Description:*** MSV(L) Request for Equitable Adjustments	7.000	-	-
Title: MSV Testing ***Description:*** Testing for family of Maneuver Support Vessels (MSV). ***FY 2025 Plans:*** Funds testing of MSV(L) prototype vessel. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY2025 increase to support testing of MSV(L) prototype vessel.	-	-	5.000
Accomplishments/Planned Programs Subtotals	9.383	7.827	15.030

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• R03050: *Maneuver Support Vessel (Light) (MSV-L)*	97.676	149.449	66.634	-	66.634	68.438	69.156	74.958	75.309	0.000	601.620

Remarks

Significant Accomplishments:
-MSV(L) Prototype Launch and Extended Acceptance Trials
-MSV(L) Milestone C Documentation generated and submitted into staffing.
-MSV(H) A-CDD AROC Approval

D. Acquisition Strategy

The single, full- scale MSV(L) prototype will undergo contractor and government testing in FY23 through FY25. Following prototype testing the prototype vessel may be used as a test bench for future modifications and or a training asset.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Maneuver Support Vessel (MSV)*

Family of MSV: Affordability and Feasibility studies will be performed to inform acquisition strategies and requirements. Competitive design efforts will result in digital prototypes which will further inform acquisition strategies and requirements. Family of MSV acquisition strategies maximize competition at every phase of design, prototyping, and test to yield the most affordable and achievable position for the Army in the program's production phase.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) EJ9 / *Maneuver Support Vessel (MSV)*	

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
Trade Studies and Business Analysis	TBD	Various : Various	0.717	1.688	May 2023	1.457	Nov 2023	2.730	Nov 2024	-		2.730	Continuing	Continuing	-
MSV Requirements Development	TBD	TBD : TBD	-	-		5.647	Feb 2024	5.500	Feb 2025	-		5.500	0.000	11.147	-
MSV(L) EMD Closeout	SS/ FPEPA	Vigor LLC : Portland Oregon	80.977	7.000	Mar 2023	-		-		-		-	0.000	87.977	-
		Subtotal	81.694	8.688		7.104		8.230		-		8.230	Continuing	Continuing	N/A

Support ($ 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
Salaries for Matrix Personnel Army Watercraft, GVSC, ILSC PSID and ACC-Wrn.	MIPR	Detroit Arsenal : Warren, MI 48397-5000	21.720	0.695	Jan 2023	0.723	Dec 2023	1.800	Dec 2024	-		1.800	0.000	24.938	-
		Subtotal	21.720	0.695		0.723		1.800		-		1.800	0.000	24.938	N/A

Test and Evaluation ($ 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
MSV Testing Requirements	MIPR	Various : Various	-	-		-		5.000	Nov 2024	-		5.000	0.000	5.000	-
		Subtotal	-	-		-		5.000		-		5.000	0.000	5.000	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	103.414	9.383		7.827		15.030		-		15.030	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Maneuver Support Vessel (MSV)*

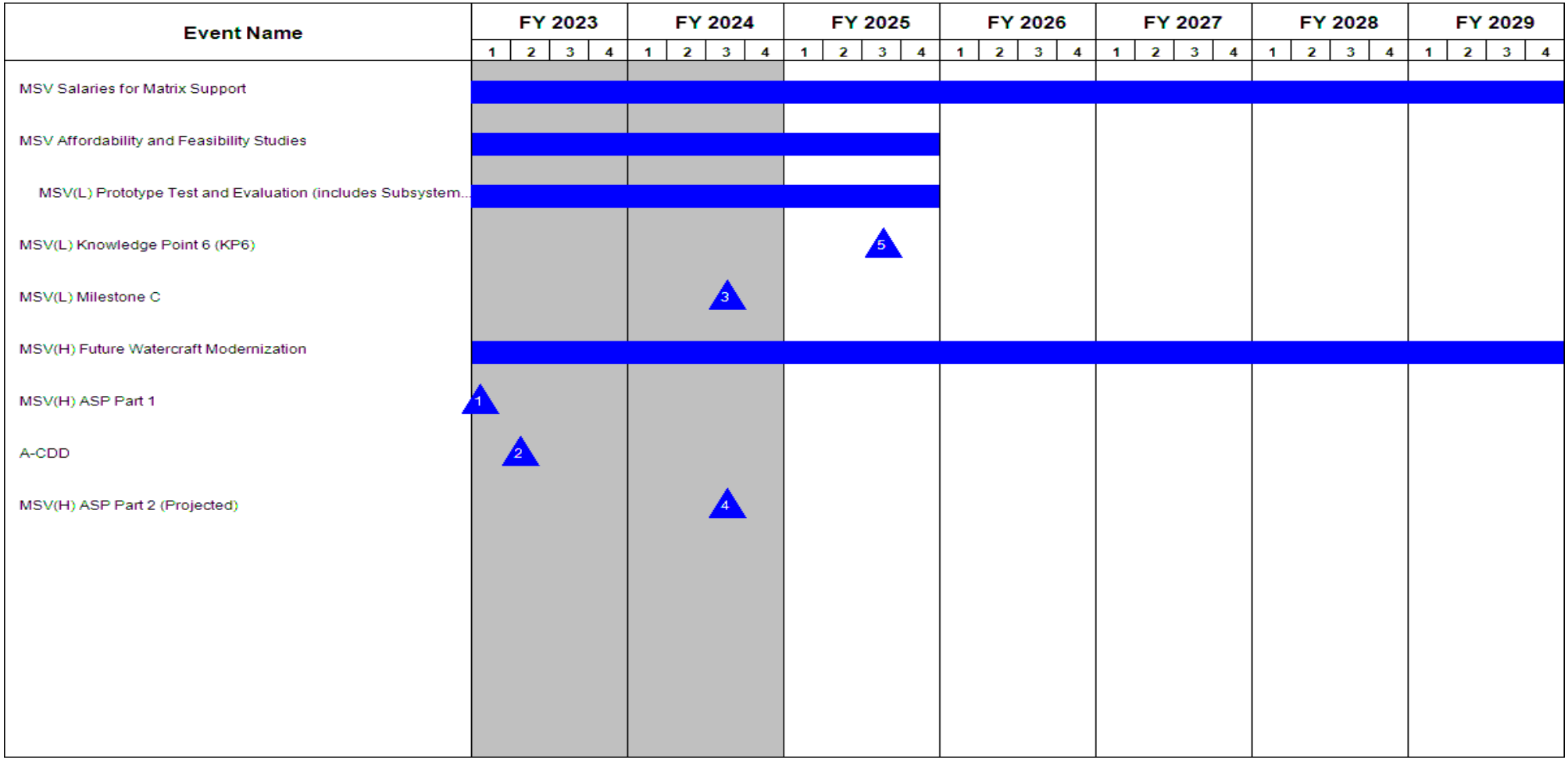


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Maneuver Support Vessel (MSV)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MSV Salaries for Matrix Support	4	2016	4	2029
MSV(L) Contractor System Integration Laboratory (CSIL)	4	2018	2	2022
MSV Affordability and Feasibility Studies	1	2022	4	2025
MSV(L) Prototype Build	4	2019	4	2022
MSV(L) Prototype Test and Evaluation (includes Subsystem tests)	4	2019	4	2025
MSV(L) Knowledge Point 6 (KP6)	3	2025	3	2025
MSV(L) Milestone C	3	2024	3	2024
MSV(H) Future Watercraft Modernization	1	2022	4	2029
MSV(H) ASP Part 1	1	2023	1	2023
A-CDD	2	2023	2	2023
MSV(H) ASP Part 2 (Projected)	3	2024	3	2024

Note

Family of Maneuver Support Vessels includes multiple vessels and enablers which support Army Watercraft Modernization efforts and increase capability of Army Watercraft fleet. FY2025 funds will support MSV(L) testing and development of Family of Maneuver Support Vessels.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army												Date: March 2024
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*				Project (Number/Name) FG4 / *Ultra-Lightweight Camouflage Net System (ULCANS)*			
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**
FG4: *Ultra-Lightweight Camouflage Net System (ULCANS)*	-	5.000	-	-	-	-	-	-	-	-	0.000	5.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

ULCANS provides increased survivability against multi-spectral visual, infrared and radar threats, thermal signature suppression and significant thermal/solar reduction capability. ULCANS is capable of use in all types of weather and climatic conditions except in heavy snow and winds. ULCANS variants are integrated systems that are very lightweight, easily deployable, versatile, user friendly and tailored to the equipment meeting the requirements of operations for combat systems, command and control equipment, logistic support sites, tactical facilities, and fixed facilities. RDT&E funding for ULCANS Increment I program supports formal development for necessary technology/signature enhancements of three ULCANS Increment I variants (Woodland, Arctic, Desert/Urban) to replace current legacy ULCANS variants (Woodland and Desert).

Mobile Camouflage System (MCS) provides Full Spectrum Signature Management for Vehicles from ground, aerial, and satellite. MCS enables combat vehicle protection and survivability against current peer and near-peer threats; defeats enemy targeting and surveillance systems through multi-spectral concealment (UV, VIS, NIR, SWIR, Thermal, Radar); enables multi-domain operations in A2/AD environment and provides operational units layered protection and concealment against long-range precision fires, drones, ground, aerial, and satellite threats.

Funding supports modernization of current camouflage net systems by investigating technology insertions that decrease Soldier and ground combat vehicle detection from threat sensors. Funding also supports developing initial prototypes to enable refinement of operational requirements and early user feedback to maintain overmatch signature reduction against future threat sensors from peer competitors.

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2023**	**FY 2024**
Congressional Add: Mobile Camouflage Systems (MCS)	5.000	-
FY 2023 Accomplishments: FY23 Congressional adds for MCS will be utilized for the research and development of multiple full-scale prototypes for operational platforms. Funding will be utilized for an MCS Development for Bradley Fighting Vehicle. MCS prototypes will be developed for Command Post platforms and tested in operation environments. Multiple test events are scheduled for prototype systems in FY23. Progression of the program and the data collected from R&D and test efforts will be utilized to ensure MCS will move through the entry gate process to become a requirement.		
Congressional Adds Subtotals	5.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** FG4 / *Ultra-Lightweight Camouflage Net System (ULCANS)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The acquisition strategy for ULCANS is to accelerate product development and testing to transition into production. ULCANS Snow/Alpine variant was the last remaining variant to achieve FRP/TC-STD and FMR. The FRP/TC-STD/FMR milestone was completed in September 2023, and systems are available for unit procurement. MCS CDD entry gate is scheduled for 2QFY24 and will move through the entry gate and AROC process to become a validated requirement in FY24-25.

PMFSS will coordinate with other PMs to work MCS integration and address their platform's KPP's/KSA's for signature management. PMFSS will continue to develop mature MCS solutions for platform integration. PMFSS has MOU and support agreements with multiple PMs, and MCS endorsement from ELRV, SOCOM FOSOV, ERCA, LRPF, Mission Command Battle Lab, NGCV CFT, and direct alignment to Network CFT LOE 4. PMFSS will continue the efforts to finalize MCS as a formal requirement and a program of record.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) FG4 / *Ultra-Lightweight Camouflage Net System (ULCANS)*	

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
MCS	TBD	Various : PM FSS : Natick, MA	-	1.118	Oct 2023	-		-		-		-	0.000	1.118	-
		Subtotal	-	1.118		-		-		-		-	0.000	1.118	N/A

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
MCS	TBD	Various : Various	-	1.803	Jul 2023	-		-		-		-	0.000	1.803	-
		Subtotal	-	1.803		-		-		-		-	0.000	1.803	N/A

Support ($ 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
MCS	TBD	Various : Various	-	0.858	Aug 2023	-		-		-		-	0.000	0.858	-
		Subtotal	-	0.858		-		-		-		-	0.000	0.858	N/A

Test and Evaluation ($ 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
MCS	TBD	Various : Various	-	1.221	May 2023	-		-		-		-	0.000	1.221	-
		Subtotal	-	1.221		-		-		-		-	0.000	1.221	N/A

	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
Project Cost Totals	-	5.000		-		-		-		-	0.000	5.000	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** FG4 / *Ultra-Lightweight Camouflage Net System (ULCANS)*

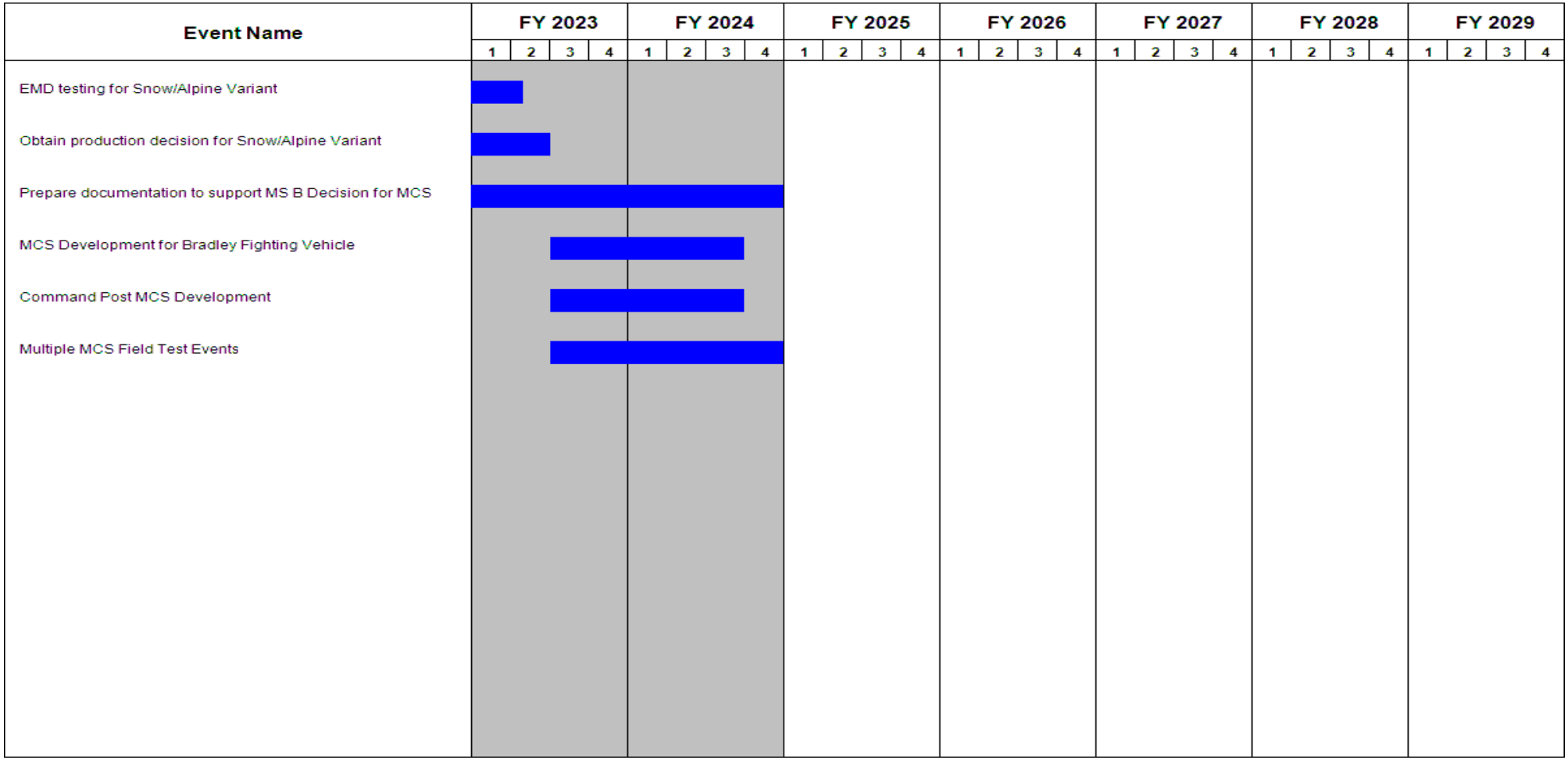


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** FG4 / *Ultra-Lightweight Camouflage Net System (ULCANS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
EMD testing for Snow/Alpine Variant	3	2020	1	2023
Complete documentation to support production decision for Snow/Alpine Variant	3	2020	4	2022
Obtain production decision for Snow/Alpine Variant	4	2021	2	2023
Prepare documentation to support MS B Decision for MCS	3	2022	4	2024
MCS Development for Bradley Fighting Vehicle	3	2023	3	2024
Command Post MCS Development	3	2023	3	2024
Multiple MCS Field Test Events	3	2023	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) H02 / *Tactical Bridging - Engineering 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
H02: *Tactical Bridging - Engineering Development*	-	8.217	-	-	-	-	-	6.112	3.757	-	0.000	18.086
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

n/a

A. Mission Description and Budget Item Justification

This project supports the engineering, prototyping, testing and manufacturing development of future force bridge systems and support equipment as well as improvements to existing systems within the Bridging Product Management portfolio.

Funding supports developmental and customer testing of the Line of Communication Bridge (LOCB), development, prototyping and testing of the Bridge Supplemental Set (BSS) and Bridge Protection Device (BPD), Bridge Enabler/TRAC Study for the Joint Assault Bridge (JAB), and funds multiple efforts to upgrade and modernize existing systems through the Family of Higher Military Load Classification Bridges (FoHMLC-B) program. Funding also supports the development of new systems and modification of existing systems within the Bridging portfolio to enhance the Army's Engineering capabilities.

H02 / Tactical Bridging - Engineering Development has no budget request.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Line of Communication Bridge (LOCB) ***Description:*** Funding requested for development and testing of higher Military Load Classification (MLC) modular Line of Communication Bridging with the mobility to span fixed or float gaps spanning 50 to 800 meters wide. Actions include the purchase of test assets, bridge structural strength analysis, performance assessments, Production Qualification Testing (PQT) and Customer Testing (CT) of the Line of Communication Bridge (LOCB) system.	3.695	-	-
Title: Family of Higher Military Load Classification Bridges (FoHMLC-B) ***Description:*** Funding provided to develop the Family of Higher Military Load Classification Bridges (FoHMLC-B). The FoHMLC-B program will upgrade current bridging systems and develop future bridging systems to support the increased weights of armored combat vehicles crossing Assault Fixed, Assault Float, Tactical Fixed and Tactical Float bridging systems.	4.522	-	-
Accomplishments/Planned Programs Subtotals	8.217	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• G06520: *BRIDGE SUPPLEMENTAL SET*	0.439	4.414	0.000	-	0.000	-	-	-	-	0.000	4.853
• G82404: *LINE OF COMMUNICATION BRIDGE LOCB*	13.785	-	0.000	-	0.000	-	-	-	-	0.000	13.785
• GZ3001: *Joint Assault Bridge*	35.990	159.804	174.779	-	174.779	142.993	168.203	200.946	202.887	0.000	1,085.602
• G84900: *ASSAULT BREACHER VEHICLE (ABV)*	3.852	-	5.681	-	5.681	0.079	3.098	10.223	10.325	0.000	33.258
• M27200: *BRIDGE, FLOAT-RIBBON, PROPULSION*	-	42.559	30.807	-	30.807	-	-	-	-	0.000	73.366

Remarks

D. Acquisition Strategy

The acquisition strategy is for Research, Development, Test & Evaluation efforts to support prototyping, testing and follow-on production efforts for future Bridging systems.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) H02 / *Tactical Bridging - Engineering Development*	

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
System Engineering and Program Management	MIPR	Various : Various	4.293	3.295	Feb 2024	-		-		-		-	0.000	7.588	-
		Subtotal	4.293	3.295		-		-		-		-	0.000	7.588	N/A

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
Family of High Military Load Class Bridges - HASB MLC120 Prototypes	MIPR	Anniston Army Depot (ANAD) : Anniston, AL	1.443	-		-		-		-		-	0.000	1.443	-
		Subtotal	1.443	-		-		-		-		-	0.000	1.443	N/A

Support ($ 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
Bridge Test Lab	MIPR	CCDC GVSC - Bridge Test Lab : SANGB, MI	1.043	-		-		-		-		-	0.000	1.043	-
Prototype/EMD Bridge Test Asset Transportation	TBD	TAC Code : TBD	0.266	0.033	Jul 2024	-		-		-		-	0.000	0.299	-
		Subtotal	1.309	0.033		-		-		-		-	0.000	1.342	N/A

Test and Evaluation ($ 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
Line of Communication Bridge - PQT Transportability Testing	MIPR	Aberdeen Test Center (ATC) :	3.500	2.042	May 2024	-		-		-		-	0.000	5.542	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) H02 / *Tactical Bridging - Engineering Development*	

Test and Evaluation ($ 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
		Aberdeen Proving Ground, MD													
Line of Communication Bridge - PQT Durability Testing	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	2.305	1.087	Aug 2023	-		-		-		-	0.000	3.392	-
Line of Communication Bridge - Reliability Spt/ Corrosion Testing	MIPR	CCDC DAC : APG, MD	-	0.120	Jan 2024	-		-		-		-	0.000	0.120	-
Family of High Military Load Class Bridges - IRB Test & Evaluation	MIPR	US Army Corps of Engineers - Engineering Research and Development Center (ERDC) : Vicksburg, MS	1.306	1.340	Nov 2023	-		-		-		-	0.000	2.646	-
JAB - TRAC Study	MIPR	US AFC/TRAC : Fort Leavenworth, KS	-	0.300		-		-		-		-	0.000	0.300	-
		Subtotal	7.111	4.889		-		-		-		-	0.000	12.000	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	14.156	8.217		-		-		-		-	0.000	22.373	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

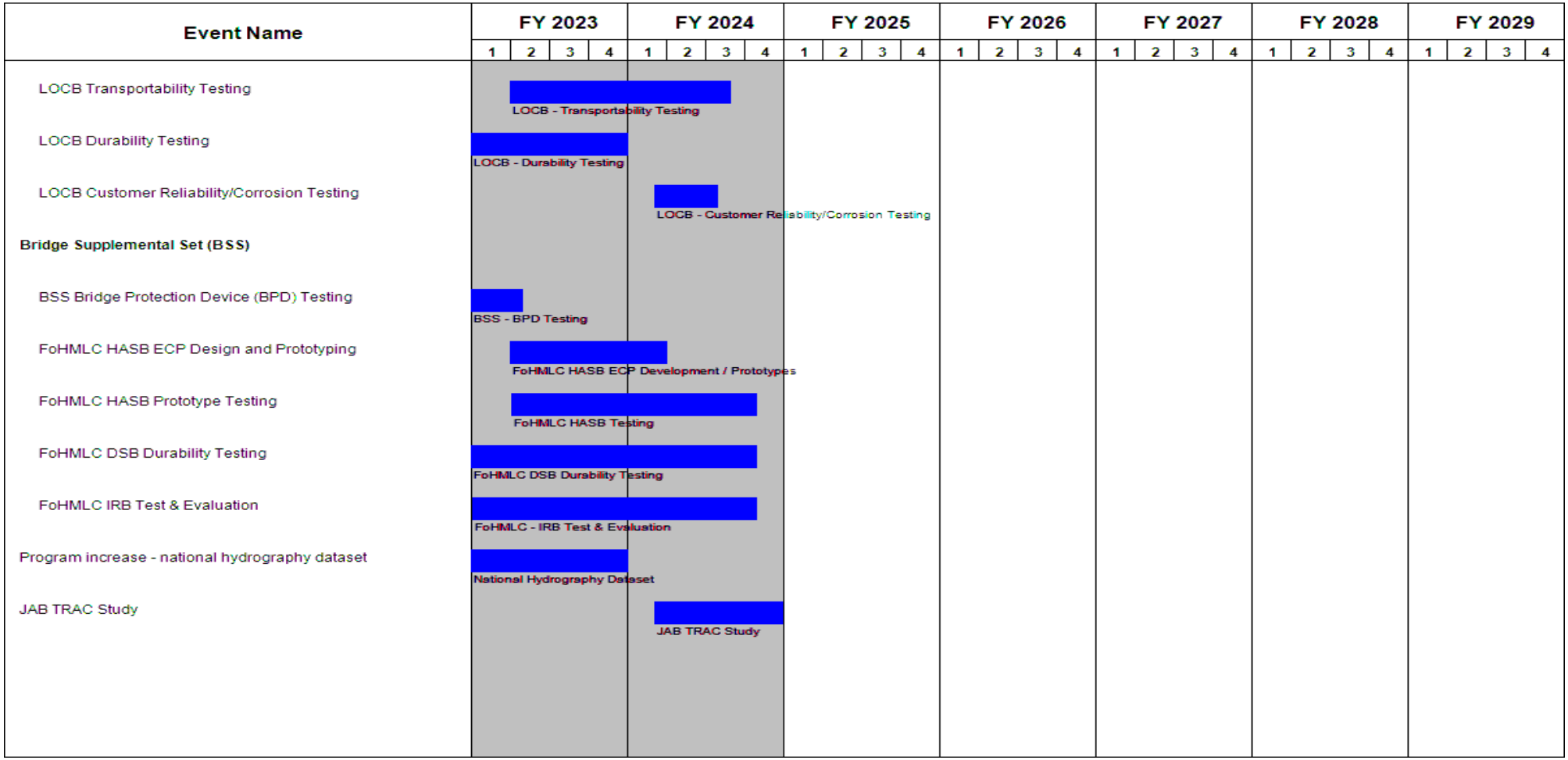


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Program increase - health usage monitoring system	3	2021	4	2022
Automated Bridge Condition Device (ABCD)	3	2021	4	2022
LOCB Transportability Testing	1	2020	3	2024
LOCB Durability Testing	2	2020	4	2023
LOCB Customer Reliability/Corrosion Testing	1	2024	3	2024
Bridge Supplemental Set (BSS)	2	2019	2	2026
BSS Prototyping	3	2020	2	2022
BSS Milestone "C"	3	2021	3	2021
BSS Transportability Testing	1	2022	3	2022
BSS Bridge Protection Device (BPD) Testing	3	2022	1	2023
Family of High Military Load Class - Bridging (FoHMLC-B)	1	2018	2	2022
FoHMLC Abbreviated Capabilities Decision Document	2	2021	2	2021
FoHMLC HASB ECP Design and Prototyping	1	2021	1	2024
FoHMLC HASB Prototype Testing	2	2023	4	2024
FoHMLC DSB Durability Testing	3	2022	4	2024
FoHMLC IRB Test & Evaluation	1	2023	4	2024
Program Support / Scope Development	1	2022	4	2022
Program increase - national hydrography dataset	4	2022	4	2023
JAB TRAC Study	1	2024	4	2024

Note

n/a

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L39 / *Field Sustainment Support Ed*	

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
L39: *Field Sustainment Support Ed*	-	1.780	4.824	8.884	-	8.884	11.331	9.288	3.066	3.096	0.000	42.269
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports the Engineering and Manufacturing Development (EMD) of critical capabilities for cargo aerial delivery for identified theater distribution and services capability gaps, improve unit sustainability, and increase combat effectiveness. Project supports the demonstration of engineering development models and Type Classification of cargo parachutes, airdrop containers, sling load equipment, and other aerial delivery equipment to improve safety, effectiveness, and efficiency of airborne operations. This project develops critical enablers that support the Army in executing future movement and maneuver operations and distributed sustainment support and the Army's Modular Force Capabilities by maintaining readiness through fielding and integrating new equipment. This project also ensures Army Expeditionary Forces are capable of rapid deployment by providing aerial delivery initiatives and reduces sustainment requirements, related Combat Support/ Combat Service Support (CS/CSS) demands in lift, combat zone footprint, and costs for logistical support.

Funding supports modernization of current cargo aerial delivery systems by investigating technology insertions that increase accuracy, collision avoidance, in flight communications, and reliability. Funding also supports developing initial prototypes to enable refinement of operational requirements and early user feedback to support future sustainment and operational movement concepts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Rapid Rigging and De-Rigging Airdrop System (RRDAS)	1.780	3.285	3.723
Description: Rapid Rigging and DeRigging Airdrop System (RRDAS) reduces rigging times while also providing the capability to rapidly de-rig loads on the drop zone. This will reduce the lead time to prepare Low Velocity Airdrop Load (LVADS) loads while also increasing the survivability of receiving ground forces by ensuring the airdrop loads (to include weapon systems, prime movers, trailers, etc.) are quickly de-rigged and made operational.			
FY 2024 Plans: Complete operational testing RRDAS-Light. Production and Type Classification Standard decisions for RRDAS-Light (RRDAS-L). MS B for RRDAS Heavy 2Q FY24. Start development of RRDAS-Heavy components.			
FY 2025 Plans: Develop RRDAS Heavy design to reach Critical Design Review. Complete Design Validation Testing and start Developmental Testing. Begin logistics support development for RRDAS Heavy.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY25 increase is to fabricate larger prototypes for RRDAS Heavy development.			
Title: Joint Precision Airdrop System (JPADS) ***Description:*** Joint Precision Air Drop System (JPADS) provides autonomous guidance of payloads dropped from altitudes up to 25,000 feet at increments of 2,000 (2K) and 10,000 (10K) pounds. JPADS allows precise delivery of critical supplies to the Warfighter on the ground while allowing aircraft delivering payloads to fly at significantly safer altitudes. The JPADS 2K V3 Upgrade provides a GPS-denied capability, but the configuration only partially meets the GPS-denied requirement. The next configuration of JPADS must support the full GPS-denied capability, including hardware and software technologies such as night-vision, anti-jam technology, radio-based navigation, low-earth orbit satellites, and M-code. M-code upgrade provides JPADS with the ability to utilize the military's upgrade GPS satellite signals. M-code signal is stronger and harder to jam, which will provide JPADS with a more resilient navigation ability when employed in GPS-denied environments. ***FY 2024 Plans:*** JPADS will start to integrate and test M-code GPS receiver on the JPADS V3 baseline platform. The effort will develop software to read new messages from the receiver and utilize them in navigation. It will also develop a hardware interface kit which mounts to the V3 JPADS and interfaces to the universal communication port. Finally, subsystem and system flight testing will be executed to demonstrate expected performance and reliability. ***FY 2025 Plans:*** Begin EMD phase of JPADS V4 development. Down-select GPS-denied sensors, mature software architecture and finalize hardware interface design. Test early prototype at Position, Navigation, and Timing Assessment Exercise 2025 (PNTAX 25). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY25 increase reflects the start of the JPADS V4 EMD effort.	-	1.539	4.000
Title: Sustainment Aerial Delivery Equipment - Sling Load (SADE-SL) ***Description:*** SADE-SL consists of four components (Payload Stabilization, Enhanced Speed Bag, Low-Cost Cargo Net, and Low-Cost Sling Sets) which provide options for the Soldiers to provide distributed supply and sustainment support. The two low-cost components (low-cost slings sets, low-cost cargo nets) reduce the overall cost of sling load equipment and the burden of intra-theatre recovery. The other two components allow for improved flight safety in the form of increased air speed by 10%-20% (Payload Stabilization Device) and decreasing hovering time to 14 seconds from time on target (Enhanced Speed Bags). ***FY 2025 Plans:***	-	-	1.161

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Begin development of the 4 SADE-SL capabilities. This includes getting the vendors under contract and maturing the designs of the Payload Stabilization, Low-Cost Slings, and Low-Cost Cargo Nets, and Enhanced Speed Bag. Additionally, the TMs for these capabilities will be advanced and undergo TM Validation. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase due to initiation of SADE-SL effort in FY 2025.			
Accomplishments/Planned Programs Subtotals	1.780	4.824	8.884

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• MA7806: *Precision Airdrop*	-	6.513	11.096	-	11.096	11.110	11.114	11.131	11.159	0.000	62.123

Remarks

D. Acquisition Strategy

The acquisition strategy for RRDAS is to continue development of the airdrop platform for various lengths and weights, complete developmental and operational testing for lighter payloads and transition to sustainment for production availability for units to requisition. For JPADS the acquisition strategy will be to integrate the M-Code cards into the JPADS avionics module and upgrade the software for cybersecurity, conduct flight testing for JPADS V4 and update drawing package with approved engineering change proposal. For SADE-SL the acquisition strategy is to further develop the design of the four capabilities (Payload Stabilization, Enhanced Speed Bag, Low-Cost Cargo Net, and Low-Cost Sling Sets) and then transitioning into developmental testing.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L39 / *Field Sustainment Support Ed*	

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
Project Management Support	Various	PM FSS : Natick, MA	6.911	0.087	Apr 2023	0.723	Dec 2023	2.000	Dec 2024	-		2.000	0.000	9.721	Continuing
		Subtotal	6.911	0.087		0.723		2.000		-		2.000	0.000	9.721	N/A

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
JPADS	Various	Various : Various	3.055	-		0.821	Oct 2023	2.200	Oct 2024	-		2.200	0.000	6.076	-
RRDAS	Various	Various : Various	2.951	0.693	Apr 2023	1.280	Nov 2023	1.700	Nov 2024	-		1.700	0.000	6.624	-
SADE-SL	TBD	Various : Various	-	-		-		0.554	Dec 2024	-		0.554	0.000	0.554	-
		Subtotal	6.006	0.693		2.101		4.454		-		4.454	0.000	13.254	N/A

Support ($ 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
JPADS	Various	Various : Various	0.256	-		0.100	Dec 2023	0.200	Dec 2024	-		0.200	0.000	0.556	-
RRDAS	Various	Various : Various	-	0.050		0.120	Dec 2023	0.173	Dec 2024	-		0.173	0.000	0.343	-
SADE-SL	TBD	Various : Various	-	-		-		0.107	Dec 2024	-		0.107	0.000	0.107	-
		Subtotal	0.256	0.050		0.220		0.480		-		0.480	0.000	1.006	N/A

Test and Evaluation ($ 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
JPADS	Various	Various : Various	2.174	-		0.500	Jan 2024	1.000	Apr 2025	-		1.000	0.000	3.674	-
RRDAS	Various	Various : Various	2.718	0.950	Aug 2023	1.280	Mar 2024	0.950	Dec 2024	-		0.950	0.000	5.898	-
		Subtotal	4.892	0.950		1.780		1.950		-		1.950	0.000	9.572	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L39 / *Field Sustainment Support Ed*	

	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	18.065	1.780		4.824		8.884		-		8.884	0.000	33.553	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

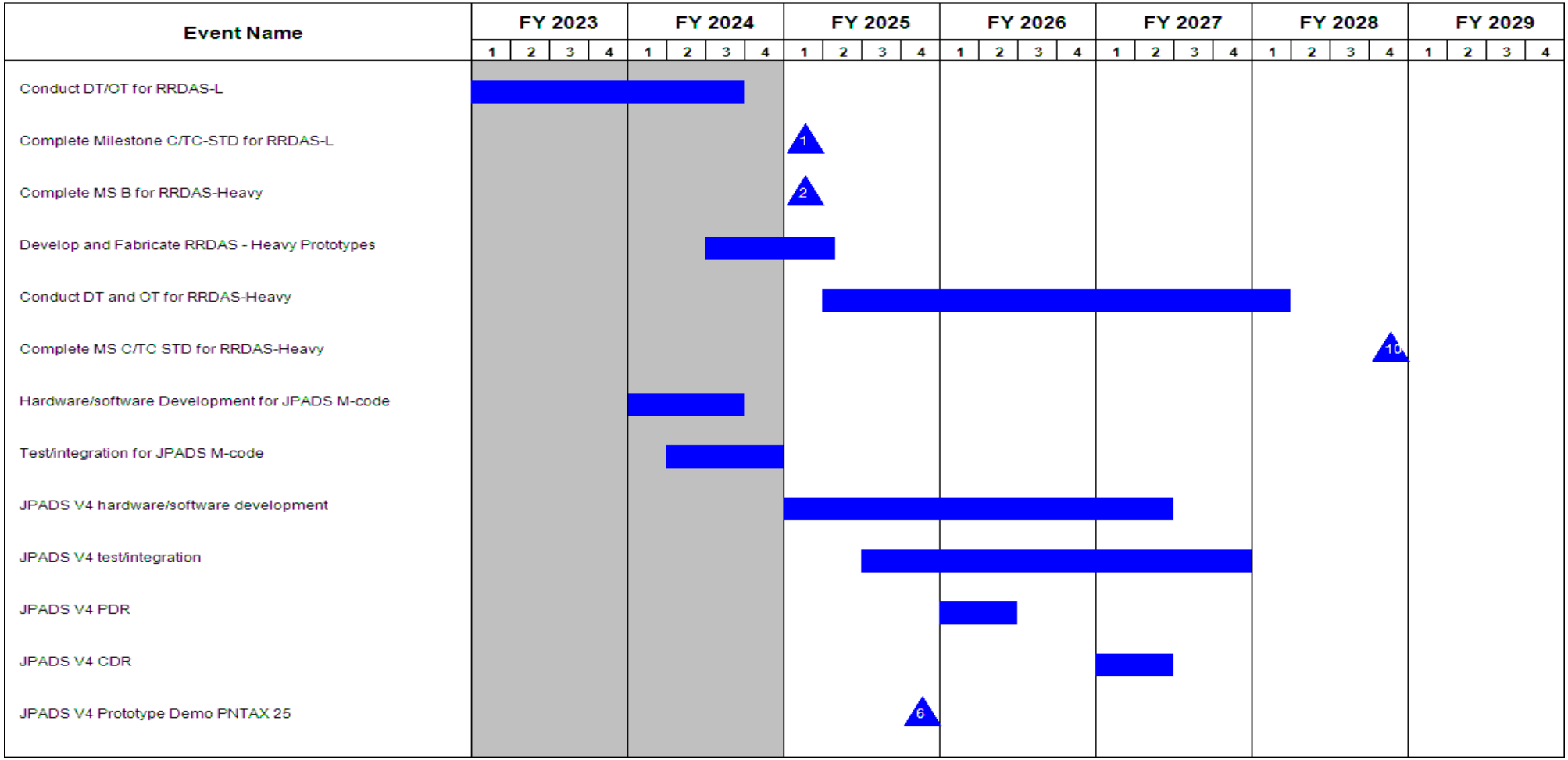


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

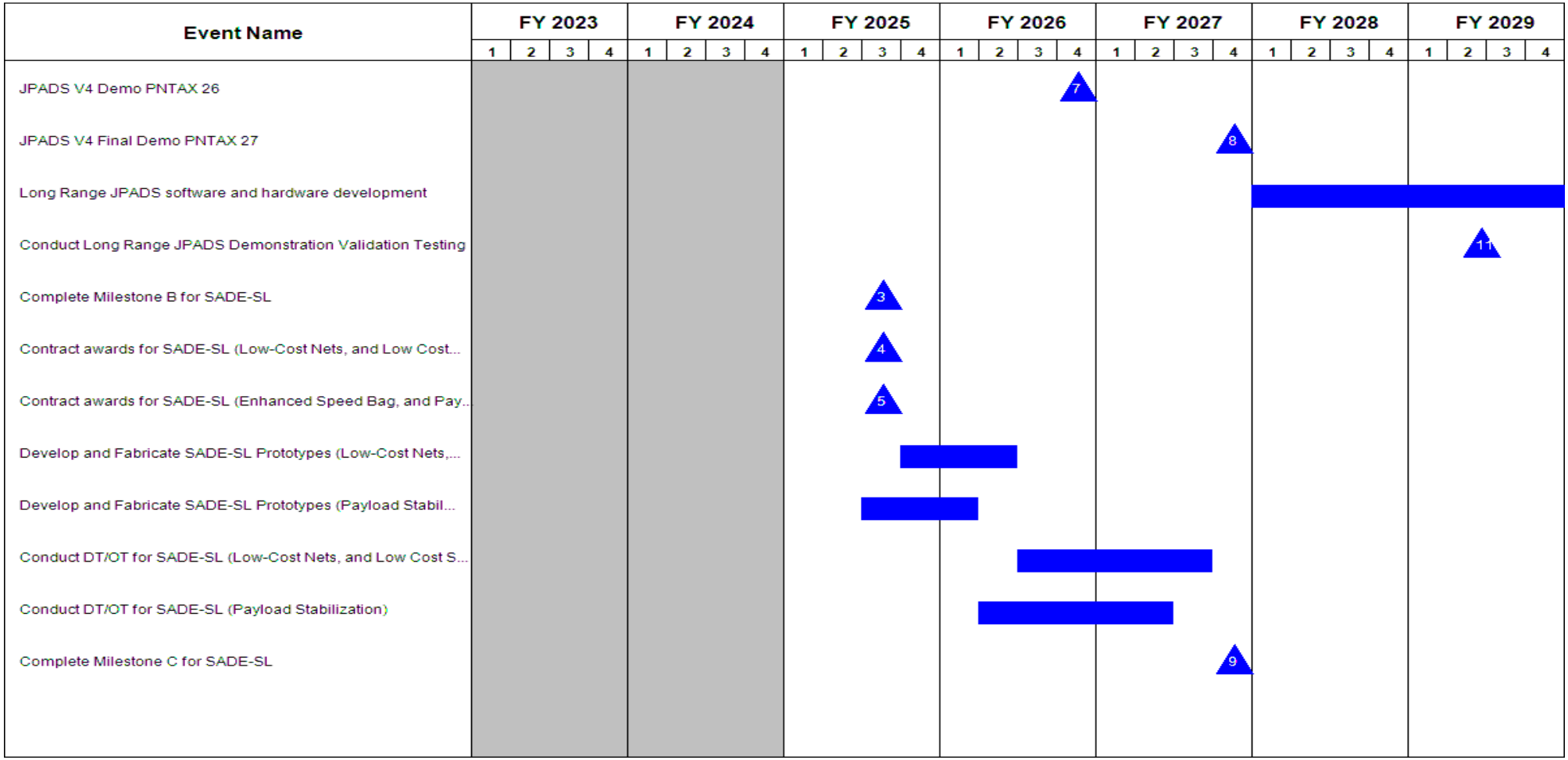


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Conduct DT/OT for RRDAS-L	3	2022	3	2024
Complete Milestone C/TC-STD for RRDAS-L	1	2025	1	2025
Complete MS B for RRDAS-Heavy	1	2025	1	2025
Develop and Fabricate RRDAS - Heavy Prototypes	3	2024	2	2025
Conduct DT and OT for RRDAS-Heavy	2	2025	1	2028
Complete MS C/TC STD for RRDAS-Heavy	4	2028	4	2028
Contract award for JPADS cloud navigation	1	2022	1	2022
Development for JPADS GPS-denied upgrades	1	2022	4	2022
Flight testing for JPADS GPS-denied upgrades	2	2022	4	2022
Hardware/software Development for JPADS M-code	1	2024	3	2024
Test/integration for JPADS M-code	2	2024	4	2024
JPADS V4 hardware/software development	1	2025	2	2027
JPADS V4 test/integration	3	2025	4	2027
JPADS V4 PDR	1	2026	2	2026
JPADS V4 CDR	1	2027	2	2027
JPADS V4 Prototype Demo PNTAX 25	4	2025	4	2025
JPADS V4 Demo PNTAX 26	4	2026	4	2026
JPADS V4 Final Demo PNTAX 27	4	2027	4	2027
Long Range JPADS software and hardware development	1	2028	4	2030
Conduct Long Range JPADS Demonstration Validation Testing	2	2029	2	2029
Complete Milestone B for SADE-SL	3	2025	3	2025
Contract awards for SADE-SL (Low-Cost Nets, and Low Cost Sing Sets)	3	2025	3	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Contract awards for SADE-SL (Enhanced Speed Bag, and Payload Stabilization)	3	2025	3	2025
Develop and Fabricate SADE-SL Prototypes (Low-Cost Nets, and Low Cost Sing Sets)	4	2025	2	2026
Develop and Fabricate SADE-SL Prototypes (Payload Stabilization)	3	2025	1	2026
Conduct DT/OT for SADE-SL (Low-Cost Nets, and Low Cost Sing Sets)	3	2026	3	2027
Conduct DT/OT for SADE-SL (Payload Stabilization)	2	2026	2	2027
Complete Milestone C for SADE-SL	4	2027	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L41 / *Water And Petroleum Distribution - Ed*	

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
L41: *Water And Petroleum Distribution - Ed*	-	7.632	7.543	2.618	-	2.618	-	-	-	-	0.000	17.793
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports engineering and manufacturing development efforts as well as the Production Qualification Testing (PQT) and First Article Testing (FAT) efforts to provide all services with ample supply of clean fuel and water, supporting all types of missions. The Army has the mission to supply fuel for all land-based forces, including the Marines and the Air Force, and for supplying bulk drinking water to Soldiers. These programs enable the Army to improve maneuver sustainment operations to meet the demands of Army units and the Future Force. The mission includes receiving and transferring petroleum from trucks, ships, pipelines, and permanent and temporary storage facilities; moving petroleum from storage to and within corps and division areas; fuel quality surveillance testing; and dispensing in support of tactical operations, including rapid refueling of aircraft. This project also supports development and analysis of technologies designed to increase survivability of petroleum and water systems that may operate or be transported in hostile environments. The mission covers water purification and waste water treatment, reutilization, storage, distribution, alternative water source acquisition, disposal, and quality control. These research and development missions support the development and enhancement of rapidly deployed Petroleum and Water equipment, which enables the Army to achieve its vision by providing a highly mobile and self-sustaining systems in hostile joint operations areas. Programs funded on this Project includes: Tactical Fuel Distribution System (TFDS), Bulk Fuel Distribution System (BFDS), Petroleum Expeditionary Analysis Kit (PEAK), Water Bison and Water Bison Light, Water Storage and Distribution System (WSDS) , 3K Tactical Water Purification System (TWPS), Early Entry Fluid Distribution System (E2FDS) and Pipeline Trace Tool - Software Development, Modular Tactical Retail Refueling System (MTRRS), and Load Handling System (LHS) - Compatible Water Tank-rack System (HIPPO), Chemical Biological Radiological Nuclear (CBRN) Water Hauler.

This Project provides for the modernization of current Petroleum and Water System fleets by investigating technology insertions including, but not limited to: condition based maintenance, vetronics, Victory Architecture, autonomous operations and other emerging technologies. Funding also supports developing and testing initial prototypes, and production representative articles to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts. Funding supports non-traditional and middle tier acquisitions to include Other Transaction Authority (OTA) and 804.

FY 2025 Base RDTE $2.618 million provides for Tactical Fuel Distribution System (TFDS) Production Qualification Testing (PQT) closeout and Chemical Biological Radiation Nuclear (CBRN) Water Hauler Production Qualification Testing (PQT). 3k Tactical Water Purification System (3k TWPS) will achieve Milestone 'C', award Low Rate Initial Production (LRIP) hardware and start Production Qualification Testing (PQT). Water Bison will award Low Rate Initial Production (LRIP) hardware and start Production Qualification Testing (PQT) in FY 2025.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Water Bison / Bison Lite	0.139	0.483	1.015

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: The Unit Water Trailer (Water Bison) is a replacement for the 400 gallon Water Buffalo. A second variant, the Water Bison Lite, is also required. The Water Bison consists of a baffled, 500 gallon capacity tank and the Water Bison Lite consists of a baffled, 250 gallon capacity tank. They provide the modular force an efficient method of transporting a full day of supply (DOS) of bulk potable water. Both systems include freeze protection that are mounted on a trailer and include all hoses and fittings necessary to dispense water by means of gravity flow. The Water Bison and Water Bison Lite will be used by units at all echelons. The Family of Medium Tactical Vehicles (FMTV) shall be capable of towing this system. ***FY 2024 Plans:*** Bison - System engineering test management ***FY 2025 Plans:*** Funds Bison Production Qualification Testing (PQT) ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase initiation of Production Qualification Testing (PQT)			
Title: Early Entry Fluid Distribution System (E2FDS) ***Description:*** The Early Entry Fluid Distribution System (E2FDS) is a new system that enhances the Inland Petroleum Distribution System (IPDS) pipeline and rapidly establishes new or extends existing pipeline traces. It is a high throughput flexible conduit system for the transport of bulk petroleum or water across the battlefield. It is rapidly-emplaced and capable of a throughput of 850,000 gallons of fuel or 650,000 gallons of raw non-potable water, per a 20 hour operational day through a trace up to 50 miles long. The E2FDS requires little to no engineer support to emplace the conduit or pump stations. Pump stations are fully automated and centrally controlled.	0.287	-	-
Title: Petroleum Expeditionary Analysis Kit (PEAK) ***Description:*** The Petroleum Expeditionary Analysis Kit (PEAK) replaces Aviation Fuels Contamination Test Kit (AFCTK) and provides fuel quality surveillance within all Brigade Combat Teams and Support Brigades. It is a stand-alone system that will rapidly verify petroleum products' suitability for use at point of consumption. The PEAK will evaluate all kerosene-based and diesel fuels used in ground systems and aircraft. It will provide the field with the capability to determine fuel type, grade, and additives. ***FY 2024 Plans:*** PEAK - System engineering test management and travel for FY24 portion of Production Qualification Testing ***FY 2024 to FY 2025 Increase/Decrease Statement:***	0.620	1.069	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Decrease due to completion of Production Qualification Testing (PQT) as program transitions to Full Rate Production (FRP).			
Title: Tactical Fuel Distribution System (TFDS) ***Description:*** The Tactical Fuel Distribution System (TFDS) provides theater bulk petroleum distribution to maximize throughput in order to support early entry, buildup, and onward movement of forces. It replaces the M967 and M969 tanker trailers, which are nearing the end of its useful life. The TFDS consists of a 5,000 gallon armor kit compatible line haul tanker trailer, pulled primarily by the M1088 tractor. It shall be capable of retail fuel distribution and able to travel on unimproved roads and provides support from the Theater Army to Echelons Above Brigade (EAB). ***FY 2024 Plans:*** TFDS - Production Qualification Testing (PQT) / Helicopter Sling Load and Transport Testing ***FY 2025 Plans:*** Final year of engineering support costs for testing closeout. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to completion of majority of PQT testing in FY24.	0.487	3.480	0.210
Title: Load Handling System (LHS) - Compatible Water Tankrack System (HIPPO) ***Description:*** Load Handling System (LHS) - Compatible Water Tank Rack System (HIPPO) replaces the Forward Area Water Point Supply system (FAWPSS) and Semi-Trailer Mounted Fabric Tank (SMFT). It provides capability to receive, store, transport, and distribute bulk and unit retail water to the warfighter. The HIPPO consists of a 2,000 gallon potable water tank in a 20' ISO frame with integrated pump, engine, alternator, hose reel, freeze prevention, and fill stand. The HIPPO is critical for sustaining the soldier and accomplishing combat service support missions at all echelons. Legacy water distribution systems do not provide the mobility required to achieve unit distribution goals for the current and objective force.	1.543	-	-
Title: Bulk Fuel Distribution System (BFDS) ***Description:*** The Bulk Fuel Distribution System (BFDS) provides theater bulk petroleum distribution to maximize throughput to support early entry, buildup, and onward movement of forces. The BFDS consists of a 7,500 gallon line haul tanker trailer, pulled primarily by the M915A3 or later version tractor. The BFDS provides bulk distribution between large fuel storage areas and will include a automated level gauge sensor for mission command reporting and providing asset and in-transit visibility. The BFDS will be used on improved roads.. ***FY 2024 Plans:***	1.335	0.150	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
SEPM for Test Engineer, final PQT report for Full Rate Production Decision. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to completion of Production Qualification Testing (PQT) as program transitions to Full Rate Production (FRP).			
Title: Water and Storage System (WSDS) ***Description:*** Water Storage Distribution System (WSDS) provides the large capacity capability that is tailorable in receiving, storing, and issuing to all bulk water systems in the Army inventory. The WSDS stores and issues potable water in support of individual consumption, medical treatment, Chemical, Biological, Radiological, and Nuclear (CBRN) decontamination. It is used in conjunction with the 1,500 gph Tactical Water Purification System (1.5K TWPS) or the 3,000 gph Reverse Osmosis Water Purification Unit (3K ROWPU). It is the only program of record that is designed to store bulk water in the quantities needed for the Warfighter. The 100,000 gallon WSDS is containerized and will take the place of two 40K systems in the Composite Supply Companies.	1.420	-	-
Title: Modular Fuel System (MFS) Tank Rack Module (TRM) - M107 40gpm Pump Modification Kit ***Description:*** The Modular Fuel System (MFS), Tank Rack Module (TRM) is a 2,500 gallon mobile storage and distribution platform. It is configured in a 20 foot ISO frame and is capable of being transported by a Heavy Expanded Mobility Tactical Truck-Load Handling System (HEMTT-LHS) and the Palletized Load Handling System (PLS). The MFS TRM has a Stand-Alone Retail Capability, utilizing its integrated continuous use electric pump, filter separator and flow meter. It can be operate mounted on the prime mover or trailer or on the ground. There are currently two fielded variants of the TRM (M107 & M107A1). The M107 TRM has a 20 GPM fuel pump as compared to the 40 GPM pump on the M107A1. Modification effort will install the M107A1 pump (and correlating Filter Separator) into the M107 with result in a 100% faster pumping time. ***FY 2024 Plans:*** Fudning for system developmental engineering and test planning/system management, completion of Prototype Testing and contract award for Low Rate Initial Production ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to testing completion.	1.228	0.150	-
Title: 3k Tactical Water Purification Sys. (3k TWPS) ***FY 2024 Plans:***	0.402	0.300	0.510

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
3k TWPS - System engineering management and completion of TDP/P-Spec ***FY 2025 Plans:*** 3k TWPS will achieve Milestone "C" decision and LRIP contract award. RDTE Funding provided for Production Qualification Testing (PQT) ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase to support Production Qualification Testing (PQT), engineering support costs and testing closeout.			
Title: Chemical Biological Radiological Nuclear (CBRN) Water Hauler ***Description:*** The Chemical Biological Radiological Nuclear (CBRN) Water Hauler consists of an 800-gallon capacity tank with integral freeze protection, mounted on the MTV 5 Ton Truck. Decontamination operations require bulk non-potable water in support of the Joint Force per ATP 3-11.32 of up to 450 gallons per vehicle. Decontamination capabilities are critical in Multi-Domain Operations (MDO) because the enemy will utilize multiple layers of Anti-Access and Area Denial (A2AD) capabilities to include CBRN threats to delay and to impose high cost to obstruct strategic objectives. ***FY 2024 Plans:*** Finalize product design/packaging engineering and production of prototype test asset. Production Qualification Testing (PQT) will be funded from FY24 RDTE and will span FY24-25. ***FY 2025 Plans:*** Funds Production Qualification Testing (PQT), engineering support costs and testing closeout. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to completion of activities associated with the Source Selection Board, LRIP hardware and Production Qualification Testing (PQT)	0.171	1.911	0.883
Accomplishments/Planned Programs Subtotals	7.632	7.543	2.618

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• MA6000: *Distribution Systems, Petroleum & Water*	33.844	40.989	57.050	-	57.050	92.695	105.831	107.557	103.401	0.000	541.367
• D02001: *Semitrailers, tankers*	14.869	40.359	59.602	-	59.602	100.964	104.186	114.307	105.329	0.000	539.616
• MA4502: *INSTALLATION OF MODIFICATIONS*	4.999	5.833	8.160	-	8.160	5.575	9.861	9.848	9.903	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• MB6400: *QUALITY SURVEILLANCE EQUIPMENT*	1.045	2.507	2.879	-	2.879	7.487	7.493	7.500	7.575	0.000	36.486

Remarks

D. Acquisition Strategy

Industry days and market research will inform the appropriate Acquisition Strategy for Chemical Biological Radiation Nuclear (CBRN) Water Hauler, Water Bison 500g, Petroleum Expeditionary Analysis Kit (PEAK), Tactical Fuel Distribution System (TFDS), Bulk Fuel Distribution System (BFDS) and Water Storage and Distribution System (WSDS). Conduct developmental and operational testing where applicable for Petroleum Expeditionary Analysis Kit (PEAK), Water Bison 500g, Tactical Fuel Distribution System (TFDS), Petroleum Tankers, and Water Storage and Distribution Systems (WSDS) 40,000 gallon and 100,000 gallon sets. Conduct Source Selection Evaluation Boards (SSEBs) within the Petroleum and Water Systems portfolio. Develop documentation in support of Milestone Decisions. Will award Other Transactional Agreements (OTAs) or traditional Federal Acquisition Regulation (FAR) based contracts based on market research, industry capabilities and program risks.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

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
PM Matrix Spt / GVSC Engineering Spt	MIPR	Various TACOM : Warren, MI	5.540	1.722	Jan 2023	2.603	Jan 2024	0.995	Jan 2025	-		0.995	0.000	10.860	-
		Subtotal	5.540	1.722		2.603		0.995		-		0.995	0.000	10.860	N/A

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
CBRN - Design/Packaging Engineering	MIPR	Combat Capabilities Development Command (DEVCOM) Ground Vehicle Systems Center (GVSC) : TACOM Warren, MI	-	0.080	Mar 2023	0.550	Nov 2023	-		-		-	0.000	0.630	-
3K TWPS - Tech Data Package Update	MIPR	GVSC : Warren, MI	-	0.267	Apr 2023	-		-		-		-	0.000	0.267	-
		Subtotal	-	0.347		0.550		-		-		-	0.000	0.897	N/A

Support ($ 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
Bison - User Jury	MIPR	TBD : TBD	-	-		0.120	Apr 2024	-		-		-	0.000	0.120	-
TFDS - User Jury	MIPR	TBD : TBD	-	-		0.200	Mar 2024	-		-		-	0.000	0.200	-
		Subtotal	-	-		0.320		-		-		-	0.000	0.320	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L41 / *Water And Petroleum Distribution - Ed*	

Test and Evaluation ($ 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
TFDS - Production Qualification / HSL / Transport	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		2.000	Feb 2024	-		-		-	0.000	2.000	-
TFDS - Ballistics Test	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		0.570	Aug 2024	-		-		-	0.000	0.570	-
HIPPO - PQT / FAT / HSL / Transportability Testing	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	1.510	1.498	May 2023	-		-		-		-	0.000	3.008	-
MFS TRM - Mod Kit Prototype Testing	MIPR	Army Test Center : Yuma, AZ	-	0.932	Feb 2023	-		-		-		-	0.000	0.932	-
BFDS - Production Qualification Test	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	1.238	Mar 2023	-		-		-		-	0.000	1.238	-
PEAK - Production Qualification Testing / Cust. Test (LUT)	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	0.306		0.700	Nov 2023	-		-		-	0.000	1.006	-
WSDS - Production Qualification Testing / Cust. Test (LUT)	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	1.302	Mar 2023	-		-		-		-	0.000	1.302	-
Bison - Production Qualification Testing	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		-		0.700	Jun 2025	-		0.700	0.000	0.700	-
CBRN - Production Qualification Testing (PQT)	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		0.800	Aug 2024	0.573	Jun 2025	-		0.573	0.000	1.373	-
E2FDS - GVSC - Software Int Lab	MIPR	GVSC : Warren, MI	-	0.150	Jan 2023	-		-		-		-	0.000	0.150	-
3K TWPS - Production Qualification Testing	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		-		0.350	Aug 2025	-		0.350	0.000	0.350	-
E2FDS - Helicopter Sling Load Testing	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	0.137	May 2023	-		-		-		-	0.000	0.137	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

Test and Evaluation ($ 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
		Subtotal	1.510	5.563		4.070		1.623		-		1.623	0.000	12.766	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	7.050	7.632		7.543		2.618		-		2.618	0.000	24.843	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

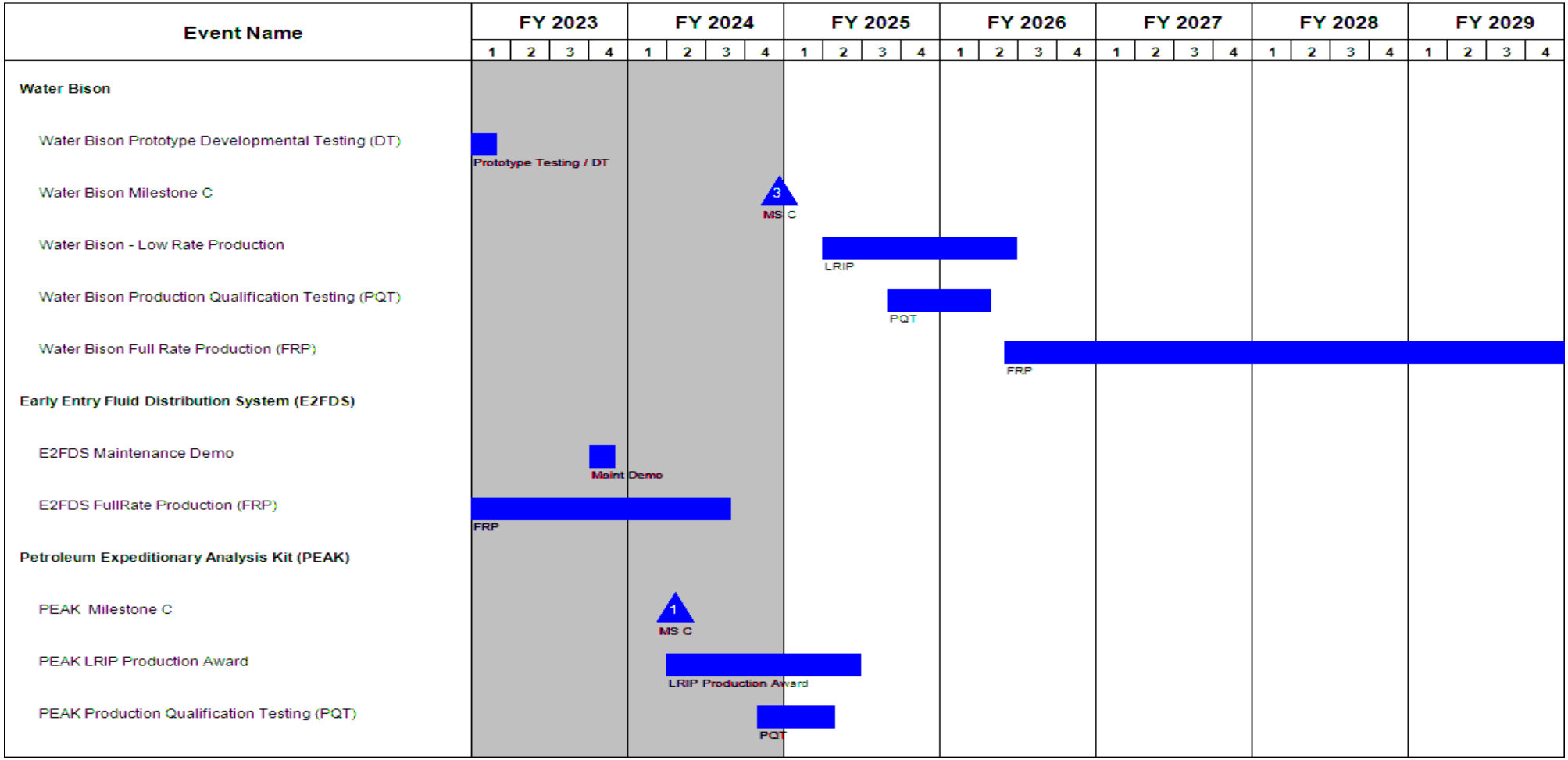


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

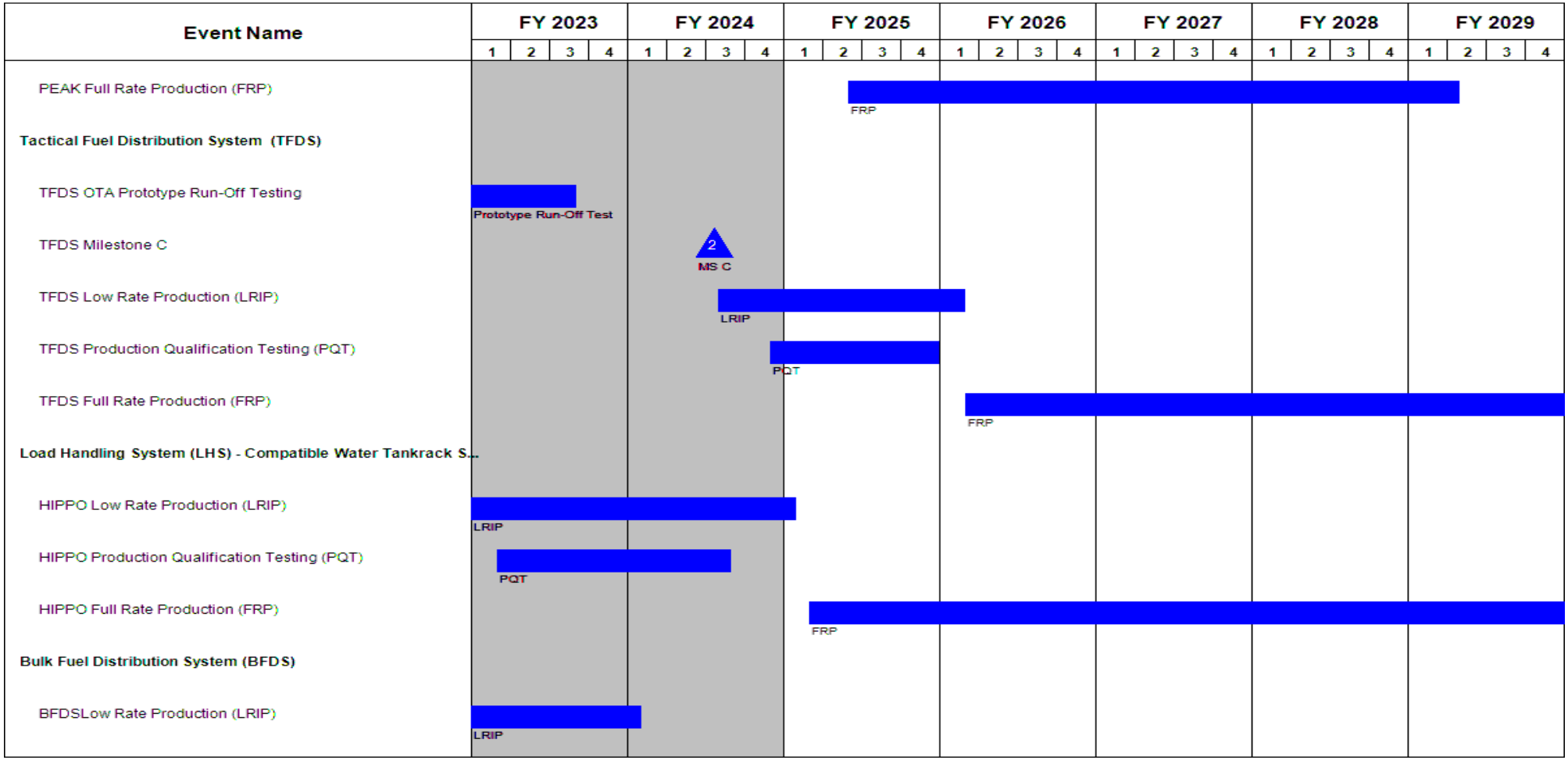


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

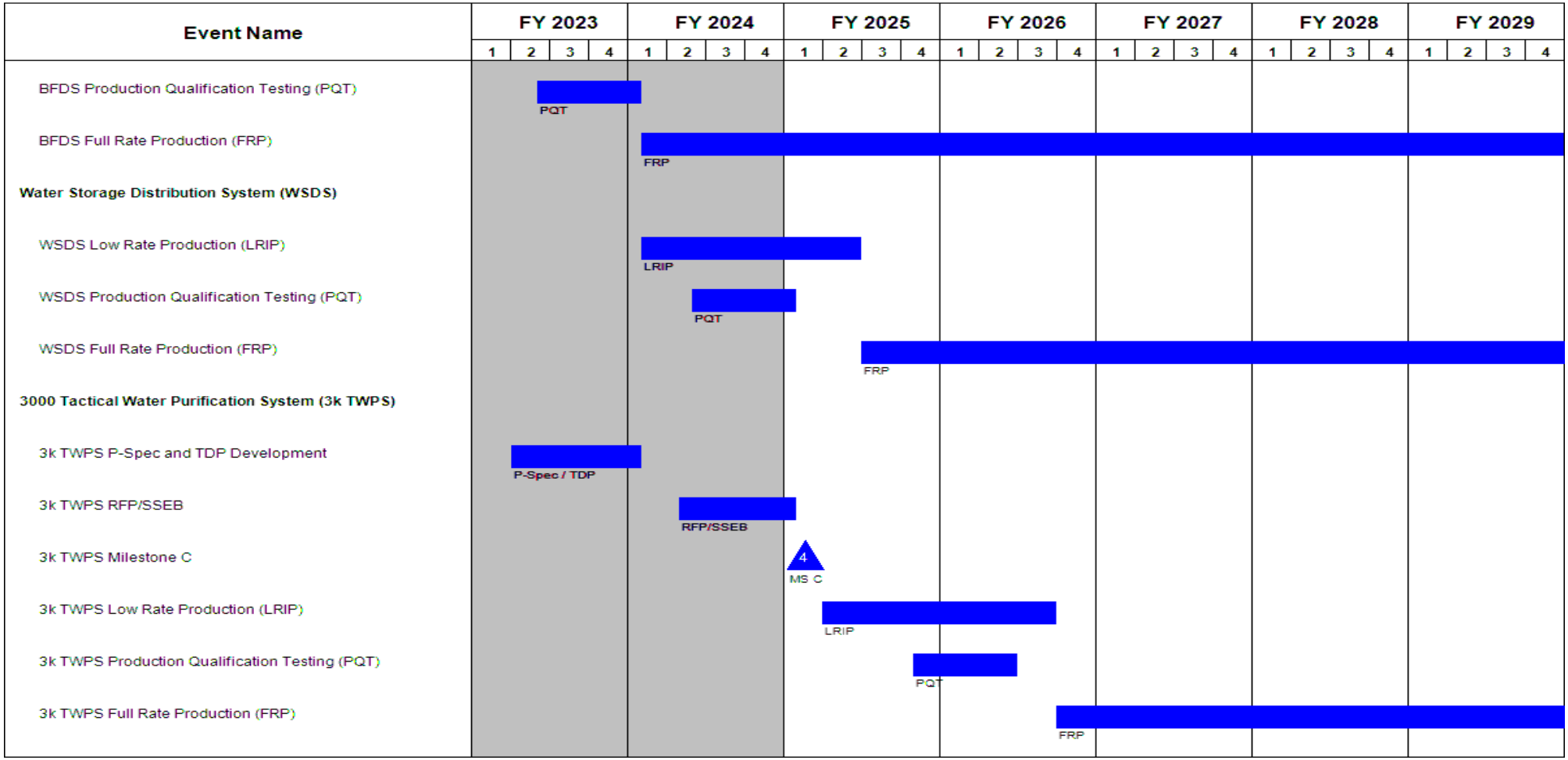
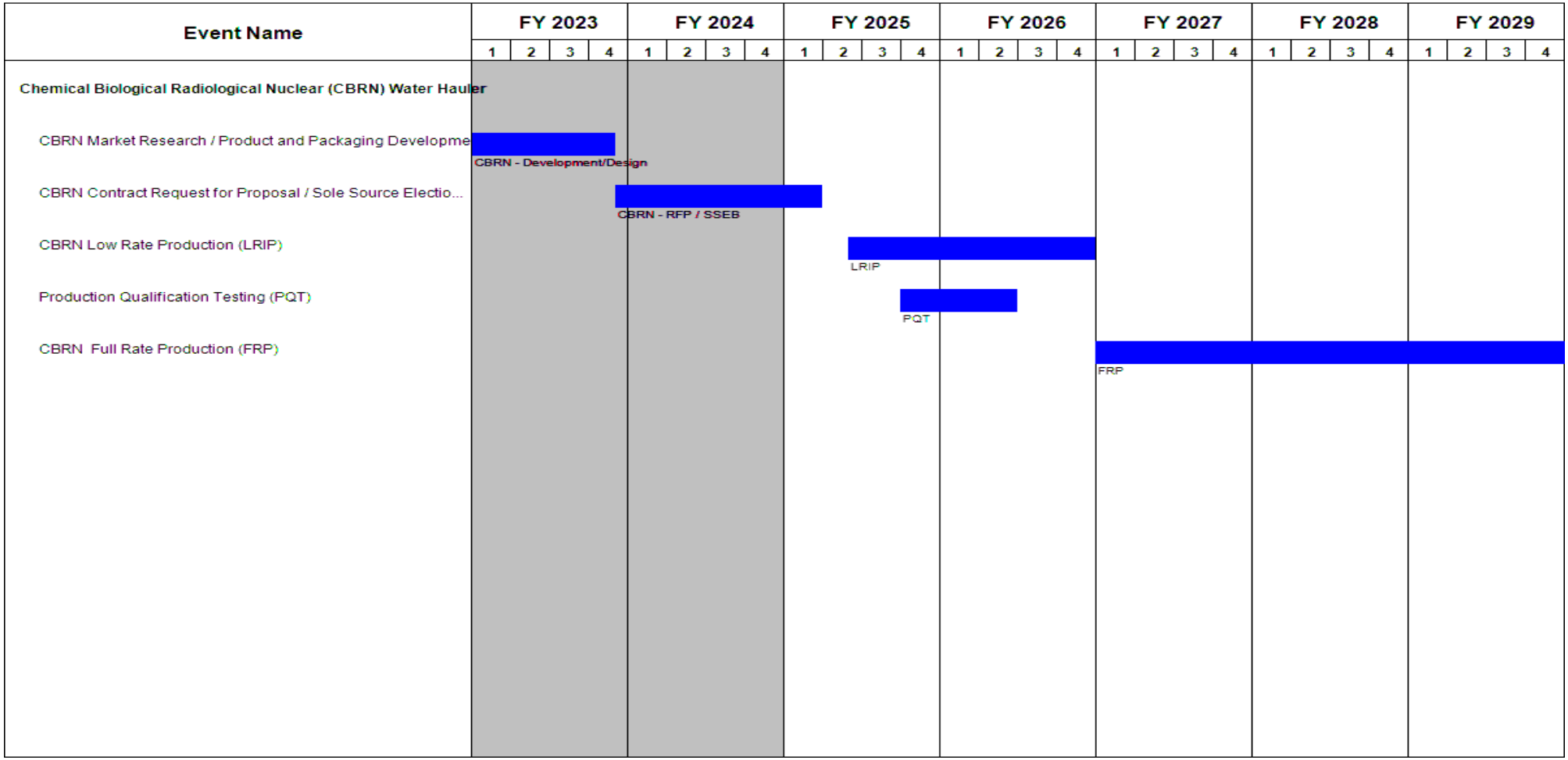


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*



Note

N/A

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Water Bison	1	2022	4	2025
Water Bison Other Transactional Authority Award	1	2022	1	2022
Water Bison Prototype Developmental Testing (DT)	3	2022	1	2023
Water Bison Milestone C	4	2024	4	2024
Water Bison - Low Rate Production	2	2025	2	2026
Water Bison Production Qualification Testing (PQT)	3	2025	2	2026
Water Bison Full Rate Production (FRP)	2	2026	4	2031
Early Entry Fluid Distribution System (E2FDS)	1	2018	4	2023
E2FDS Developmental Testing / Production Qualification Testing (DT/PQT)	1	2021	4	2022
E2FDS Log Demo and Limited User Test (LUT)	2	2022	2	2022
E2FDS Milestone C	3	2022	3	2022
E2FDS Low Rate Production (LRIP)	1	2022	4	2022
E2FDS Maintenance Demo	4	2023	4	2023
E2FDS FullRate Production (FRP)	4	2022	3	2024
Petroleum Expeditionary Analysis Kit (PEAK)	1	2021	3	2023
PEAK Contract Prototype Award (OTA)	1	2022	1	2022
PEAK - Protoype Dev Test - Fly Off Testing	2	2022	4	2022
PEAK Milestone C	2	2024	2	2024
PEAK LRIP Production Award	2	2024	2	2025
PEAK Production Qualification Testing (PQT)	4	2024	2	2025
PEAK Full Rate Production (FRP)	2	2025	2	2029
Tactical Fuel Distribution System (TFDS)	1	2020	1	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
TFDS OTA Award	2	2022	2	2022
TFDS OTA Prototype Run-Off Testing	4	2022	3	2023
TFDS Milestone C	3	2024	3	2024
TFDS Low Rate Production (LRIP)	3	2024	1	2026
TFDS Production Qualification Testing (PQT)	4	2024	4	2025
TFDS Full Rate Production (FRP)	1	2026	3	2035
Load Handling System (LHS) - Compatible Water Tankrack System (HIPPO)	3	2020	4	2025
HIPPO Developmental Test (DT)	4	2020	1	2021
HIPPO Low Rate Production (LRIP)	2	2021	1	2025
HIPPO Production Qualification Testing (PQT)	1	2023	3	2024
HIPPO Full Rate Production (FRP)	1	2025	1	2032
Bulk Fuel Distribution System (BFDS)	1	2020	2	2028
BFDS Other Transaction Authority (OTA) Award	1	2021	1	2021
BFDS (OTA) Testing	4	2021	1	2022
BFDS Milestone C	3	2022	3	2022
BFDSLow Rate Production (LRIP)	3	2022	1	2024
BFDS Production Qualification Testing (PQT)	2	2023	1	2024
BFDS Full Rate Production (FRP)	1	2024	4	2029
Water Storage Distribution System (WSDS)	4	2019	3	2028
WSDS Pump Test Assets Contract Award	1	2022	1	2022
WSDS Milestone C	2	2022	2	2022
WSDS Pump Off Testing	2	2022	3	2022
WSDS Low Rate Production (LRIP)	1	2024	2	2025
WSDS Production Qualification Testing (PQT)	2	2024	1	2025
WSDS Full Rate Production (FRP)	3	2025	3	2032

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
3000 Tactical Water Purification System (3k TWPS)	1	2023	2	2030
3k TWPS P-Spec and TDP Development	2	2023	1	2024
3k TWPS RFP/SSEB	2	2024	1	2025
3k TWPS Milestone C	1	2025	1	2025
3k TWPS Low Rate Production (LRIP)	2	2025	3	2026
3k TWPS Production Qualification Testing (PQT)	4	2025	2	2026
3k TWPS Full Rate Production (FRP)	4	2026	1	2038
Chemical Biological Radiological Nuclear (CBRN) Water Hauler	1	2023	2	2031
CBRN Market Research / Product and Packaging Development	1	2023	4	2023
CBRN Contract Request for Proposal / Sole Source Election Board	4	2023	1	2025
CBRN Low Rate Production (LRIP)	2	2025	4	2026
Production Qualification Testing (PQT)	4	2025	2	2026
CBRN Full Rate Production (FRP)	1	2027	2	2031

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*				Project (Number/Name) L46 / *Maintenance Support Equipment*			
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**
L46: *Maintenance Support Equipment*	-	0.937	1.306	-	-	-	-	3.507	1.202	1.202	0.000	8.154
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Mobile Maintenance Equipment provides state of the art, deployable, vehicle-mounted, Soldier portable and containerized shelter tool systems supporting the readiness of the Joint warfighter directly supporting Soldier Lethality, Next Generation Combat Vehicle (NGCV) and Long Range Precision Fires (LRPF), as well as, addressing GAPs 10 and 17. These systems are equipped with industrial quality tools required for Two Level Maintenance that reduce common tool redundancy, provide tool standardization, minimize transportation requirements, reduce logistical footprint, and are backed by a Lifetime Warranty/Replacement Program which reduces sustainment costs. This is accomplished by employing a system of systems approach to maintenance acquisition. The System of Systems approach builds a maintenance capability upon each system, allowing a logical and natural approach to the Army's overall two level maintenance strategy. These inter-connected systems distributed throughout the Army at multiple levels and echelons provide a holistic repair capability in all scenarios and environments. These systems provide the Maintenance and Combat Commanders an unprecedented capability to repair wheeled, tracked, aviation, ground support and weapons systems on site at one location at one time. This approach to maintenance acquisition increases efficiencies and supports the current force while providing modular configurations designed to meet the specific needs of the Army maintainer in today's complex transforming environment.

The need to develop and maintain a System of System maintenance approach is critical for maintaining readiness due to the growing complexity of today's military equipment, operational tempo, modularity, and current and evolving Tactics Techniques and Procedures (TTPs). The individual maintenance systems are comprehensive, interconnected and capable of solving and repairing any maintenance problems. The System of Systems approach does not advocate specific tools, methods or practices; instead it seeks to promote a streamlined comprehensive set of systems for solving maintenance challenges where the interactions of doctrine, technology, time and tactics techniques and procedures are the primary drivers. Funding for projects shall include test article procurement and testing of Soldier portable maintenance Sets, Kits, and Outfits (SKOs), load banks and refrigeration tool kit; investigation of new technologies for next generation mobile maintenance equipment shop sets including the Shop Equipment Welding (SEW) and Shop Equipment Contact Maintenance (SECM); development of additional Standard Automotive Tool Set (SATS) maintenance modules, Armament Repair Shop Set (ARSS), Refrigeration Tool Kit (RTK), Mobile Ammunition Processing Facility (MAPF), Forward Repair System (FRS), Special Tools initiatives, shelter mounted system development; packaging development; and technical support for emerging Joint Capabilities Integration and Development System (JCIDS) materiel requirements documents. Additive Manufacturing increased capabilities to the Metal Working and Machining Shop Set (MWMSS) to include a polymer and metal printing and associated digital library capability. Modernization upgrades increase effectiveness while improving efficiency, reliability and maintainability while supporting emerging Army systems as well as using lower cost set components.

Funding supports modernization of the current Ordnance equipment by investigating technology insertions due to but not limited to obsolescence and technology innovations. Funding also supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement concepts.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L46 / *Maintenance Support Equipment*

L46 / Maintenance Support Equipment has no FY 2025 funding request.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: MWMSS Additive Manufacturing ***Description:*** Develop Additive Manufacturing capability for Army systems, Limited User Experiment and Evaluation. ***FY 2024 Plans:*** Funds will support market research and ongoing limited user experimentation in support of MWMSS AM capabilities. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** R&D efforts for the MWMSS Additive Manufacturing will be completed in FY24 and will be in production.	-	0.431	-
Title: Forward Repair System and Standard Automotive Tool Set ***FY 2024 Plans:*** Funds development, TDP updates, test build, test activities, and logistics updates in support of the FRS and SATS. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No additional FY 2025 funds are required as FRS Technical Data Package updates, test asset build, and testing will utilize FY 2024 RDTE. FRS will commence production in FY 2024.	0.937	0.875	-
Accomplishments/Planned Programs Subtotals	0.937	1.306	-

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• G05301: *Mobile Maintenance Equipment Systems*	176.545	17.287	26.271	-	26.271	64.919	96.627	115.803	123.719	0.000	621.171
• D16400: *FORWARD REPAIR SYSTEM (FRS)*	-	8.140	12.573	-	12.573	-	-	-	-	0.000	20.713

Remarks

D. Acquisition Strategy

Programs will progress through market research, market samples, Description for Purchase, development, production representative systems and testing. Modernization and Optimization of existing tools and testing of market samples will progress from Engineering and Manufacturing Development (EMD) and transition into production. All efforts will support the two level maintenance concept utilizing commercial technologies and incorporating them into SKOs to support next generation weapon and support systems.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L46 / *Maintenance Support Equipment*	

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
Additive Manufacturing Hardware	Various	TBD : TBD	1.098	-		0.331	Jan 2024	-		-		-	0.000	1.429	-
Forward Repair System Development / Prototype	MIPR	CCDC : Rock Island, IL	0.538	0.937		0.625	May 2024	-		-		-	0.000	2.100	-
		Subtotal	1.636	0.937		0.956		-		-		-	0.000	3.529	N/A

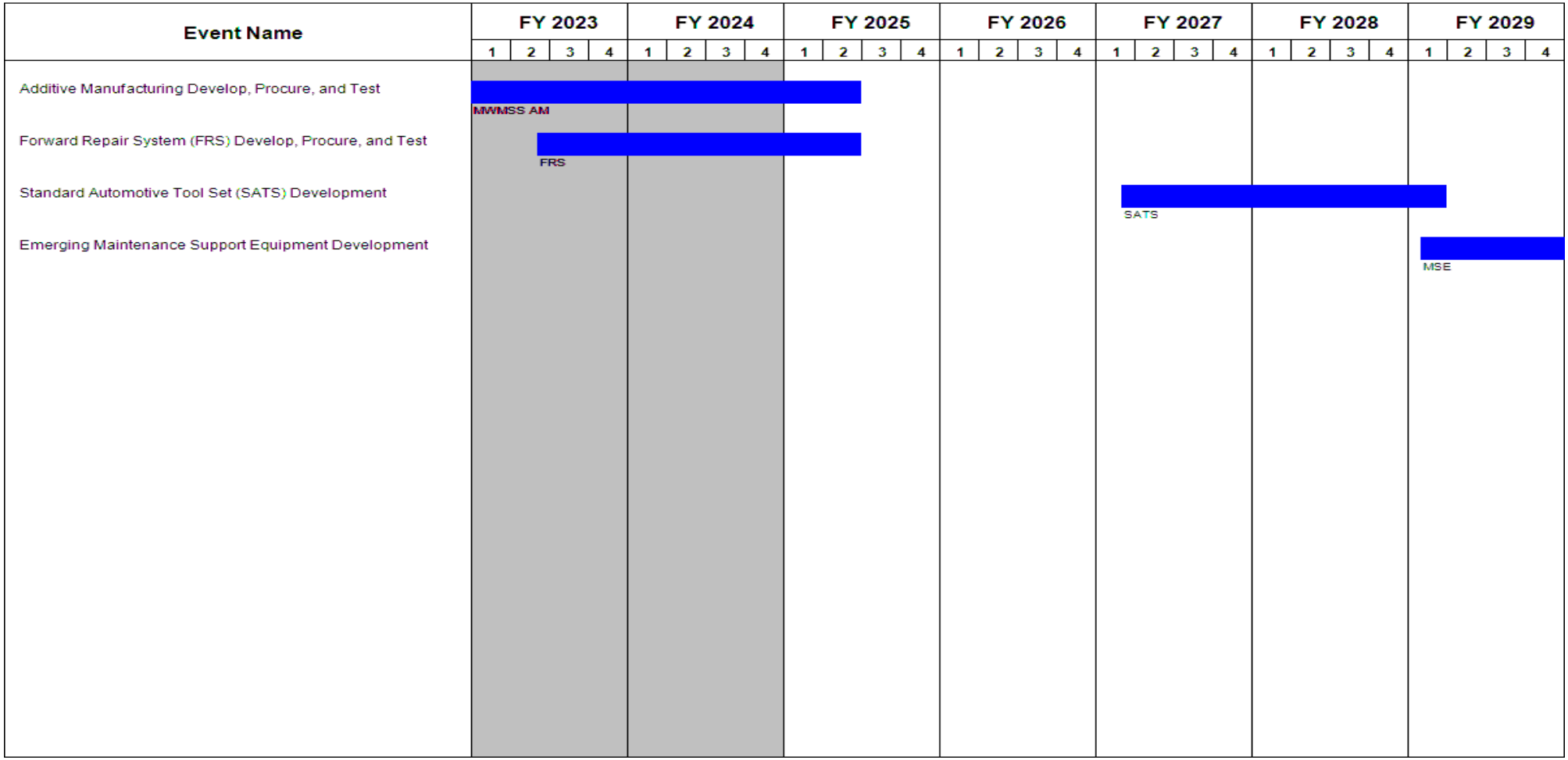
Test and Evaluation ($ in Millions)

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
Additive Manufacturing Testing	MIPR	ATEC : Aberdeen Test Center	-	-		0.100	May 2024	-		-		-	0.000	0.100	-
Forward Repair System Testing	MIPR	ATEC : Aberdeen Test Center	-	-		0.250	May 2024	-		-		-	0.000	0.250	-
		Subtotal	-	-		0.350		-		-		-	0.000	0.350	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	1.636	0.937		1.306		-		-		-	0.000	3.879	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L46 / *Maintenance Support Equipment*



Note

N/A

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L46 / *Maintenance Support Equipment*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Additive Manufacturing Develop, Procure, and Test	3	2016	2	2025
Forward Repair System (FRS) Develop, Procure, and Test	2	2023	2	2025
Standard Automotive Tool Set (SATS) Development	1	2027	1	2029
Emerging Maintenance Support Equipment Development	1	2029	1	2031

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L47 / *Improved Environmental Control Units Ed*	

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
L47: *Improved Environmental Control Units Ed*	-	1.473	1.102	1.171	-	1.171	1.171	1.183	1.196	1.208	0.000	8.504
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This line supports the Army Network Modernization Strategy Line of Effort #4 (Command Post). Program develops/integrates Improved Environmental Control Units (IECUs) supporting existing and new requirements including the Command Post Integrated Infrastructure (CPI2), the Army Standard Family of Rigid Wall Shelters (ASFRWS) and other applications. In addition, it supports the development of critical Chemical Biological Radiological and Nuclear (CBRN) modifications required to support the Chemically Protected Deployable Medical System and other systems requiring this capability.

The IECU program will provide updates to replace the current Military Standard Family of Environmental Control Units (ECUs) with the new generation IECUs using environmentally-suitable refrigerants to eliminate Ozone-Depleting Chemicals (ODCs) and reduce Global Warming Potential (GWP). The IECUs will provide improved cooling, heating and dehumidification to Soldiers and critical equipment systems in combat, combat support, combat service support units, and field hospitals. The IECUs are required to replace the currently fielded ECUs in order to comply with statutory and regulatory mandates on the use of Class II ODCs (such as HCFC-22) and address increasing restrictions on high GWP chemicals. Technical improvements over existing ECUs will yield fuel and weight savings, reduction in scheduled maintenance and increased reliability. Funding also provides applications engineering support to integration development for shelter/trailer platforms to assist users and help further standardize cooling units in the field. Funding also supports developing initial prototypes to enable refinement of operational requirements and technology refreshment, and design improvements to address issues and support future sustainment. Expansion of product variants will further accommodate replacement of aging legacy ECUs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Technology Development	1.473	0.267	1.171
Description: Development and integration of Improved Environmental Control Units (IECU) in the range of 9-60K BTU/Hr to support the phase out of R-410A refrigerant and support IECU platform integration into end-user systems.			
FY 2024 Plans: Integrate near term drop in replacement refrigerant (replacing R410a) to provide a lower Global Warming Potential (GWP) alternative for existing and new production 9, 18K & 36K's as well as test and evaluation for performance and reliability.			
FY 2025 Plans: Begin developing solution for implementation into platform integrated systems. Continue with developmental testing to increase the capacity of the 9K IECU. Utilize findings from long-term refrigerant studies to begin conducting tests on a far-term			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L47 / *Improved Environmental Control Units Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
refrigerant replacement for R410-A. Conduct flammability testing on potential near and far term refrigerant solutions identified as replacements for R-410A. Determine if the refrigerant solution for the 9-18-36K IECU is viable for the 60K variant. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY25 increase due to the initiating study and implementation of near and far term refrigeration solutions			
Title: Government System Test and Evaluation ***Description:*** Testing of IECU performance for multiple variants for stand-alone and soft wall shelter IECUs. ***FY 2024 Plans:*** Continue testing to verify performance and reliability of 9/18/36/60K IECUs with interim drop in replacement refrigerant (454B) to provide a lower Global Warming Potential (GWP) alternative for existing and new production IECUs. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease to support technology development efforts for refrigeration solutions.	-	0.105	-
Title: Other Contract and Government Agency ***Description:*** Support engineering, logistics, and testing efforts for multiple ECU variants, and integrated heating/cooling units. Match and right-size current IECU family to applications and/or develop and test new variants to provide the most efficient system solution. ***FY 2024 Plans:*** Continue to provide refrigeration technical expertise (fielding, testing, evaluation) in support of alternative near term refrigerant development efforts and integration and/or adaptations for IECU user programs across the Army. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease to support technology development efforts for refrigeration solutions.	-	0.130	-
Title: Government Program Management ***Description:*** Provide oversight and management of engineering, logistics, contracts, and testing efforts for the IECU family (9, 18, 36, 60K) and multiple user engagements in preparation for IECU variants to transition to production. Provide oversight and management of follow-on IECU variants. ***FY 2024 Plans:***	-	0.600	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L47 / *Improved Environmental Control Units Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue to provide oversight and management of engineering, logistics, contracts, and testing efforts for product improvement and next generation IECU system development efforts including 9/18/36K and 60K IECU programs. Prepare to initiate effort for objective solutions with low GWP refrigerant designs planned for FY25. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease to support technology development efforts for refrigeration solutions.			
Accomplishments/Planned Programs Subtotals	1.473	1.102	1.171

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• MF9303: *IMPROVED ENVIRONMENTAL CONTROL UNITS*	7.672	7.617	14.355	-	14.355	14.945	15.568	16.184	17.020	Continuing	Continuing

Remarks

D. Acquisition Strategy

Support modernization and technology insertions required to adapt ECUs for future integrated system heating and cooling applications in support of existing and new requirements including the Command Post Integrated Infrastructure (CPI2) and chemically protected deployable medical system. Evaluate requirements versus existing IECU fleet and develop/test initial prototypes of new or modified ECUs to meet integrated system heating and cooling parameters. This effort will support the development of Purchase Descriptions (PDs) and Technical Data Packages (TDPs) for eventual competitive procurement.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L47 / *Improved Environmental Control Units Ed*	

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
9,18,36,60K Improved Environmental Control Unit (IECU)	Various	PM E2S2 : various	1.645	0.595	Oct 2022	0.600	Dec 2023	-		-		-	0.000	2.840	Continuing
		Subtotal	1.645	0.595		0.600		-		-		-	0.000	2.840	N/A

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
9,18,36,60K Improved Environmental Control Unit (IECU)	MIPR	NSSC : Natick, MA	4.133	0.429	Jun 2023	0.267	Mar 2024	0.300	Mar 2025	-		0.300	0.000	5.129	Continuing
		Subtotal	4.133	0.429		0.267		0.300		-		0.300	0.000	5.129	N/A

Support ($ 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
9,18,36,60K Improved Environmental Control Unit (IECU)	MIPR	CERDEC : Ft. Belvoir, VA	4.030	0.149	Mar 2023	0.130	Dec 2023	0.021	Dec 2024	-		0.021	0.000	4.330	-
		Subtotal	4.030	0.149		0.130		0.021		-		0.021	0.000	4.330	N/A

Test and Evaluation ($ 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
9,18,36,60K Improved Environmental Control Unit (IECU)	MIPR	ETL : Dallas, TX	1.028	0.300	Apr 2023	0.105	Feb 2024	0.850	Feb 2025	-		0.850	0.000	2.283	-
		Subtotal	1.028	0.300		0.105		0.850		-		0.850	0.000	2.283	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L47 / *Improved Environmental Control Units Ed*	

	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	10.836	1.473		1.102		1.171		-		1.171	0.000	14.582	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L47 / *Improved Environmental Control Units Ed*

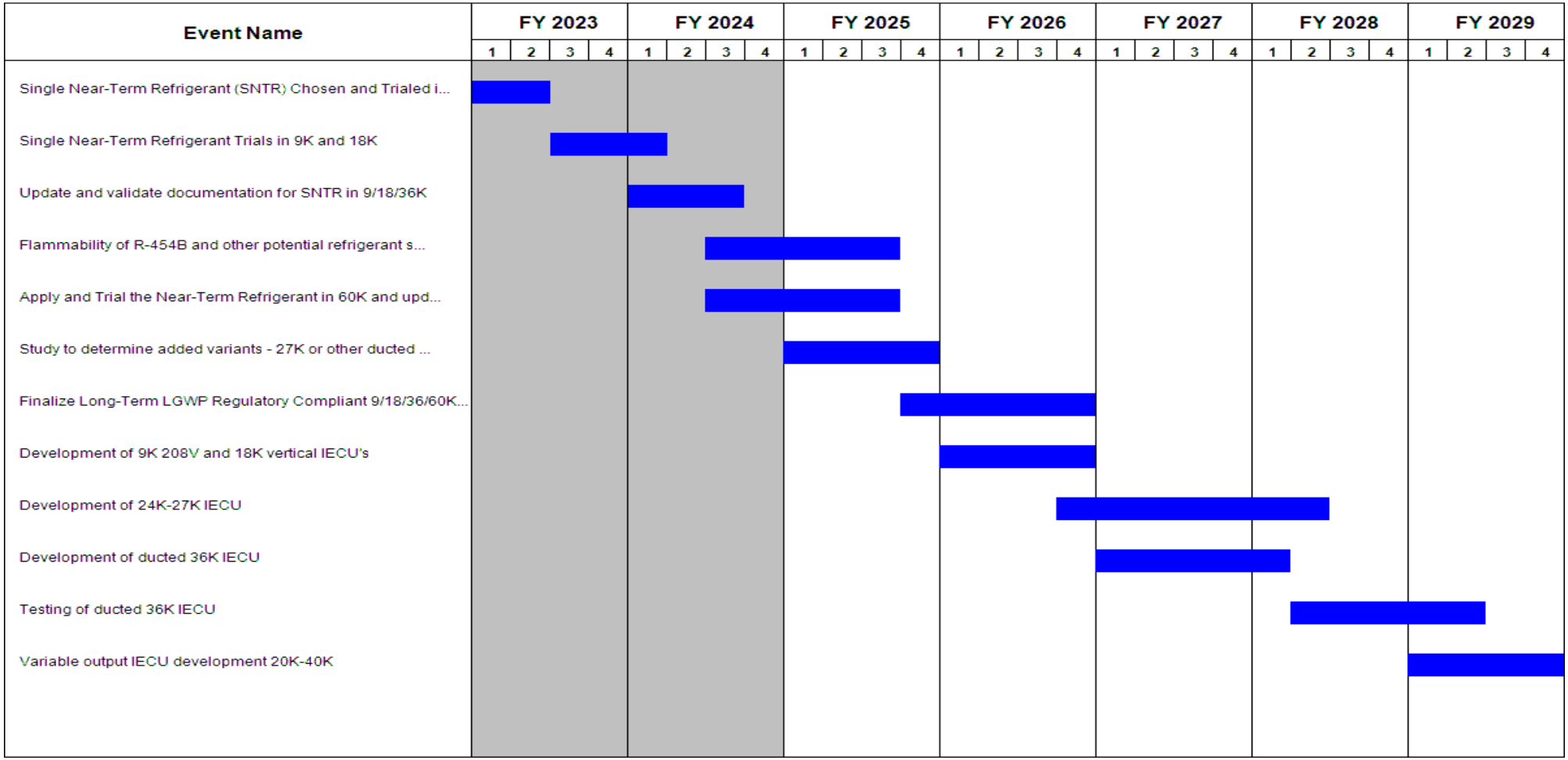


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L47 / *Improved Environmental Control Units Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Single Near-Term Refrigerant (SNTR) Chosen and Trialed in 36K	1	2023	2	2023
Single Near-Term Refrigerant Trials in 9K and 18K	3	2023	1	2024
Update and validate documentation for SNTR in 9/18/36K	1	2024	3	2024
Flammability of R-454B and other potential refrigerant solutions in 36K IECU	3	2024	3	2025
Apply and Trial the Near-Term Refrigerant in 60K and update documentation	3	2024	3	2025
Study to determine added variants - 27K or other ducted variants	1	2025	4	2025
Finalize Long-Term LGWP Regulatory Compliant 9/18/36/60K Design	4	2025	4	2026
Development of 9K 208V and 18K vertical IECU's	1	2026	4	2026
Development of 24K-27K IECU	4	2026	2	2028
Development of ducted 36K IECU	1	2027	1	2028
Testing of ducted 36K IECU	2	2028	2	2029
Variable output IECU development 20K-40K	1	2029	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) VR7 / *Combat Service Support Systems*	

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
VR7: *Combat Service Support Systems*	-	15.253	2.012	2.261	-	2.261	1.180	1.193	1.205	1.217	0.000	24.321
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports Engineering and Manufacturing Development (EMD) of critical soldier support and sustainment systems that provide more endurance and agility to combat operations, enabling success of Army Expeditionary Forces in future multi-domain scenarios. Project includes highly mobile shelter systems (rigid and soft wall), expeditionary base camp subsystems, field service systems, mortuary affairs equipment, field heaters, and other combat service support equipment. These systems will fill identified theater capability gaps, improve safety, improve unit sustainability, improve resource and energy efficiency; address environmental impacts, and increase combat effectiveness. This project supports Engineering and Manufacturing Development (EMD), Prototyping, and testing of critical tactical support systems that allow mobile Joint Service command and control, as well as medical, force projection, and maintenance platforms. This project develops critical enablers that support a number of strategic initiatives, including the Army Campaign Plan, the Army Modernization Strategy, the Army Climate Strategy, and the Army Arctic Strategy. This project ensures Army Expeditionary Forces are capable of rapid deployment while reducing sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands in lift, combat zone footprint, and costs for logistical support. Specifically, shelters developed under these efforts will be better insulated and more energy efficient, thus reducing environmental control requirements, energy demand, and fuel usage. Therefore, they will reduce the Army's logistics and carbon footprint and lengthen the resupply interval in contested, support-constrained environments. Additionally, better insulated shelter systems allow for operational viability in extreme environments such as the Arctic.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Army Standard Family of Rigid Wall Shelters (ASF-RWS)	3.253	2.012	2.261
Description: The ASF-RWS program conducts formal development to modernize and standardize three variants of Army rigid wall shelters by incorporating the latest material and manufacturing technologies. Doing so will reduce the proliferation of non-standard shelters and their associated logistics burden across the Services. The program produces approved and tested standard shelter designs to support procurements by materiel developers and Program Managers (PMs) requiring rigid wall shelters. Once developed and formally type-classified, ASF-RWS shelter procurements are customer-funded by PMs as a cost under their program(s). The ASF-RWS program is structured as three sub-programs, each focused on a shelter variant: Phase One (P1) - Expandable/Non-Expandable Variant Phase Two (P2) - Vehicle Mounted Variant Phase Three (P3) - Panelized Variant			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** VR7 / *Combat Service Support Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue with ASF-RWS P1 program development. Award performance specification based development contract with production options, conduct design development build and test PQT units, conduct Test Readiness Review (TRR) and initiate logistics development for ASF-RWS P2 (Vehicle Mounted Shelters). Conduct market strategy, develop performance specification, build performance specification based RFP with production options for ASF-RWS P3 (Panelized Shelter). ***FY 2025 Plans:*** Complete P1 Developmental Testing (DT), continue development of the Product Support Package (PSP), and prepare for Milestone (MS) C /Type Classification (TC)/Full Material Release (FMR) activities. Prepare for ASF-RWS P2 (Vehicle Mounted) contract award. For ASF-RWS P3, complete Operational Assessments (OA), complete logistics development, and prepare for and execute TC-STD/ FMR. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase to support the ASF-RWS P2 (Vehicle Mounted Shelter) contract activities.			
Accomplishments/Planned Programs Subtotals	3.253	2.012	2.261

	FY 2023	FY 2024
Congressional Add: ASF-RWS P3 Expandable- Panelized and Collapsible Shelter (E-PACS)	12.000	-
FY 2023 Accomplishments: ASF-RWS P3 design enhancements will be incorporated to the initial EPACS prototype, and 11 new Prototypes will be procured. Operational Assessment (OA) will be conducted in support of future P3 efforts.		
Congressional Adds Subtotals	12.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

To support modernization and standardization to the next generation of Army Rigid Wall Shelters (RWS) by incorporating 30+ years of shelter performance technology and improved manufacturing for increased producibility and affordability. Provide more modular shelters for increased interoperability and scalability.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) VR7 / *Combat Service Support Systems*	

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
Project Management Support	Various	PM Force Sustainment Systems : Natick, MA	2.834	4.491	May 2024	1.009	Dec 2023	1.261	Dec 2024	-		1.261	0.000	9.595	-
		Subtotal	2.834	4.491		1.009		1.261		-		1.261	0.000	9.595	N/A

Remarks

Project Management Support category includes matrix labor support.

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
Army Standard Family of Rigid Wall Shelters (ASF-RWS)	Various	Various : Various	3.143	9.284	Aug 2023	0.803	Dec 2023	0.500	Nov 2024	-		0.500	0.000	13.730	-
		Subtotal	3.143	9.284		0.803		0.500		-		0.500	0.000	13.730	N/A

Test and Evaluation ($ 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
Army Standard Family of Rigid Wall Shelters (ASF-RWS)	Various	Various : Various	0.582	1.478	Feb 2024	0.200	Dec 2023	0.500	Dec 2024	-		0.500	0.000	2.760	-
		Subtotal	0.582	1.478		0.200		0.500		-		0.500	0.000	2.760	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	6.559	15.253		2.012		2.261		-		2.261	0.000	26.085	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** VR7 / *Combat Service Support Systems*

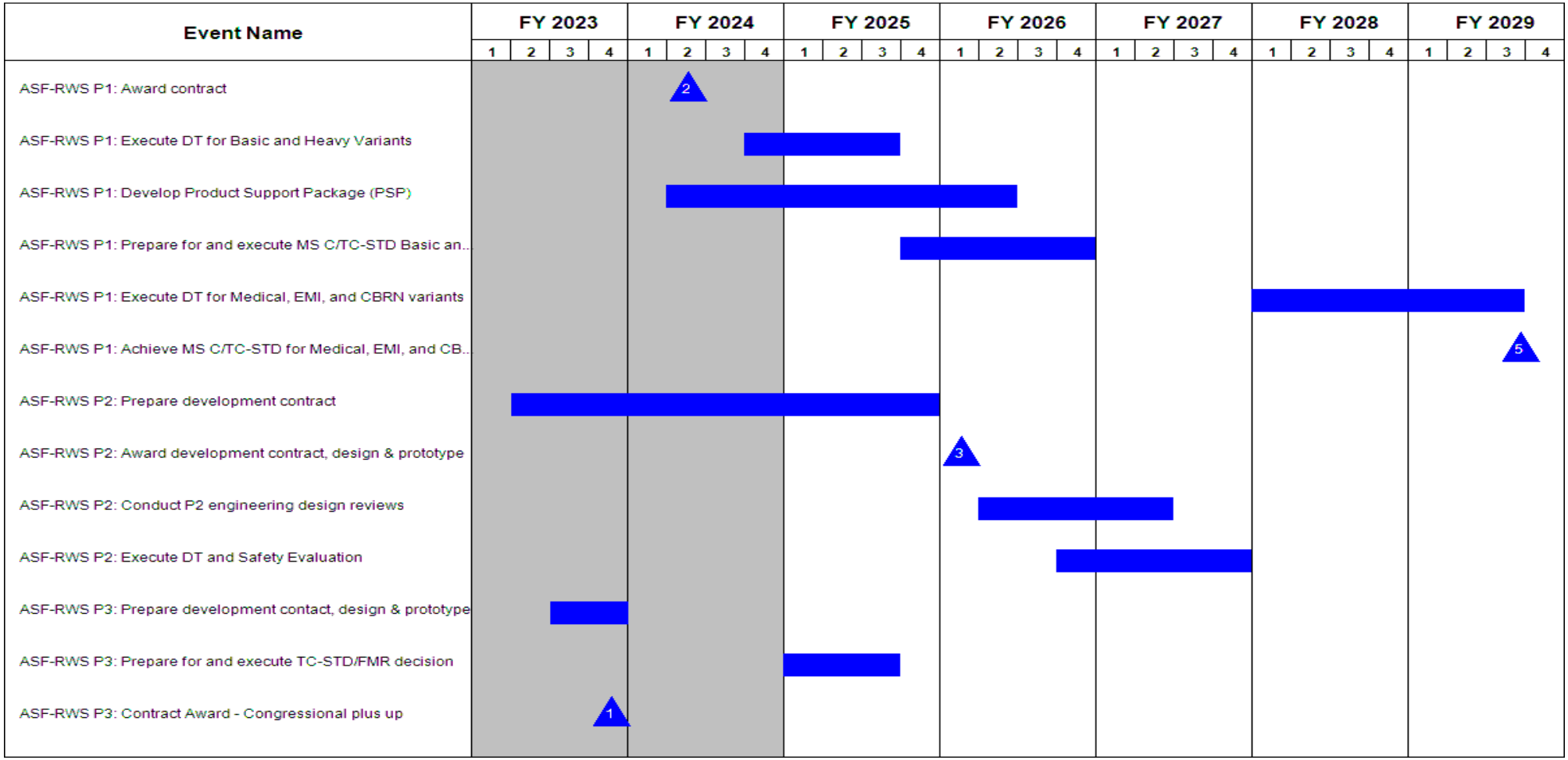


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** VR7 / *Combat Service Support Systems*

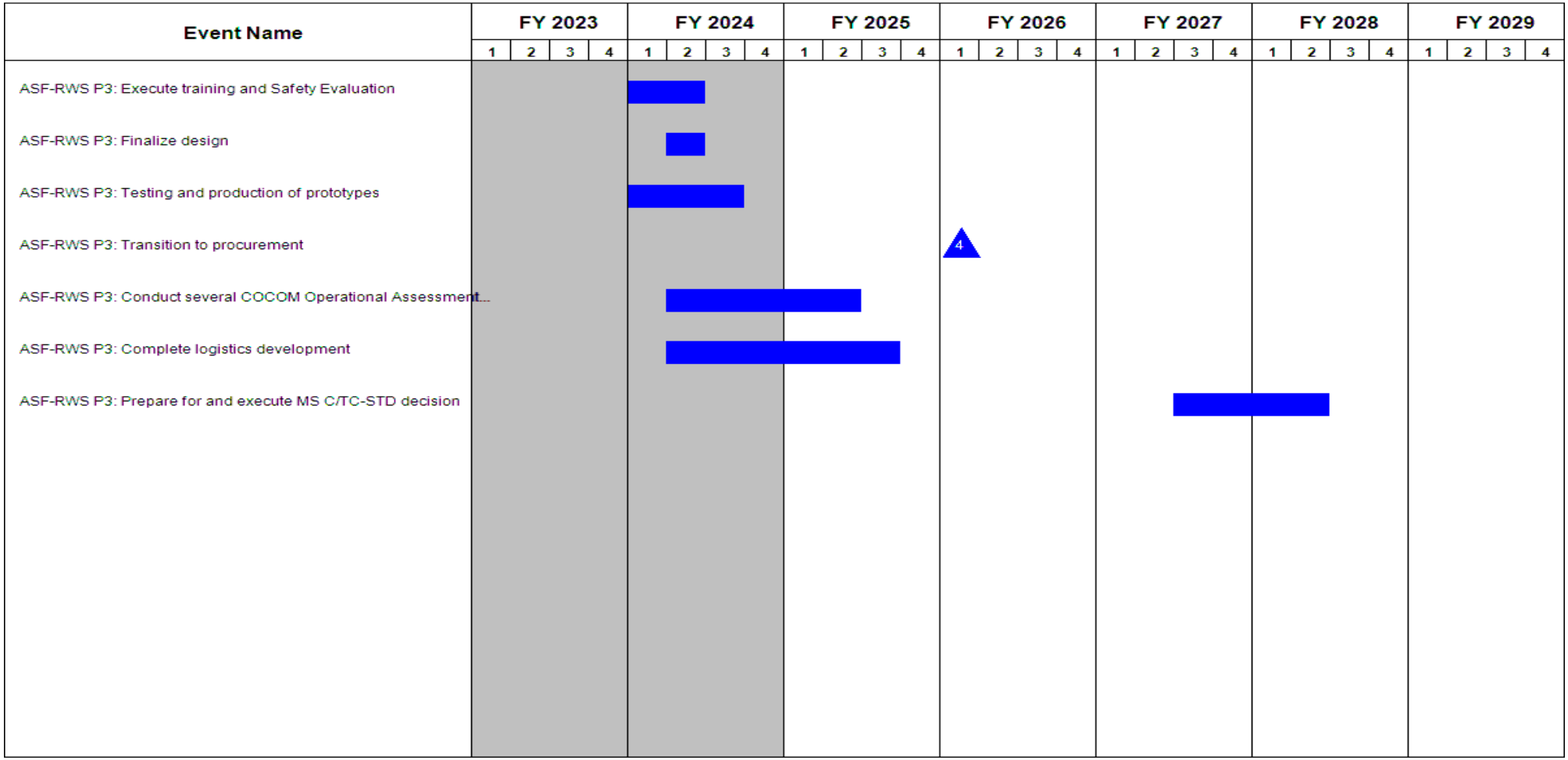


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** VR7 / *Combat Service Support Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ASF-RWS P1: Award contract	2	2024	2	2024
ASF-RWS P1: Execute DT for Basic and Heavy Variants	4	2024	3	2025
ASF-RWS P1: Develop Product Support Package (PSP)	2	2024	2	2026
ASF-RWS P1: Prepare for and execute MS C/TC-STD Basic and Heavy Variants	4	2025	4	2026
ASF-RWS P1: Execute DT for Medical, EMI, and CBRN variants	1	2028	3	2029
ASF-RWS P1: Achieve MS C/TC-STD for Medical, EMI, and CBRN variants	3	2029	3	2029
ASF-RWS P2: Prepare development contract	2	2023	4	2025
ASF-RWS P2: Award development contract, design & prototype	1	2026	1	2026
ASF-RWS P2: Conduct P2 engineering design reviews	2	2026	2	2027
ASF-RWS P2: Execute DT and Safety Evaluation	4	2026	4	2027
ASF-RWS P3: Prepare development contact, design & prototype	3	2023	4	2023
ASF-RWS P3: Prepare for and execute TC-STD/FMR decision	1	2025	3	2025
ASF-RWS P3: Contract Award - Congressional plus up	4	2023	4	2023
ASF-RWS P3: Execute training and Safety Evaluation	1	2024	2	2024
ASF-RWS P3: Finalize design	2	2024	2	2024
ASF-RWS P3: Testing and production of prototypes	1	2024	3	2024
ASF-RWS P3: Transition to procurement	1	2026	1	2026
ASF-RWS P3: Conduct several COCOM Operational Assessments (OA)	2	2024	2	2025
ASF-RWS P3: Complete logistics development	2	2024	3	2025
ASF-RWS P3: Prepare for and execute MS C/TC-STD decision	3	2027	2	2028