Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army												Date: March 2023
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 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
Total Program Element	-	49.201	75.669	37.420	-	37.420	21.475	12.652	8.758	8.896	0.000	214.071
194: *Engine Driven Gen Ed*	-	13.102	25.023	12.806	-	12.806	12.151	7.167	3.214	3.291	0.000	76.754
EJ9: *Maneuver Support Vessel (MSV)*	-	4.175	9.473	7.827	-	7.827	-	-	-	-	0.000	21.475
FG4: *Ultra-Lightweight Camouflage Net System (ULCANS)*	-	1.100	5.000	-	-	-	-	-	-	-	0.000	6.100
H02: *Tactical Bridging - Engineering Development*	-	16.525	8.528	-	-	-	-	-	-	-	0.000	25.053
L39: *Field Sustainment Support Ed*	-	2.216	1.847	4.824	-	4.824	3.790	3.070	3.103	3.138	0.000	21.988
L41: *Water And Petroleum Distribution - Ed*	-	8.242	7.921	7.543	-	7.543	2.013	-	-	-	0.000	25.719
L46: *Maintenance Support Equipment*	-	0.738	0.972	1.306	-	1.306	-	-	-	-	0.000	3.016
L47: *Improved Environmental Control Units Ed*	-	1.735	1.529	1.102	-	1.102	1.207	1.207	1.220	1.233	0.000	9.233
VR7: *Combat Service Support Systems*	-	1.368	15.376	2.012	-	2.012	2.314	1.208	1.221	1.234	0.000	24.733

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 2024 Army	Date: March 2023
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	54.642	41.669	26.218	-	26.218
Current President's Budget	49.201	75.669	37.420	-	37.420
Total Adjustments	-5.441	34.000	11.202	-	11.202
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	34.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-5.441	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	11.202	-	11.202

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
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: H02: *Tactical Bridging - Engineering Development*		
Congressional Add: *Program increase - national hydrography dataset*	2.000	-
Congressional Add Subtotals for Project: H02	2.000	-
Project: VR7: *Combat Service Support Systems*		
Congressional Add: *ASF-RWS P1 and P3 MINATORS*	-	12.000
Congressional Add Subtotals for Project: VR7	-	12.000
Congressional Add Totals for all Projects	2.000	27.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
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*

Change Summary Explanation

Fiscal Year (FY) 2024 funding increase in project L39 is to continue and complete design validation and continue developmental testing for RRDAS; begin JPADS M-code hardware/software development, test and integration.

Fiscal Year (FY) 2024 funding increase in project EJ9 is due to new efforts associated with industry and Government collaboration to inform MSV(H) desired characteristics through concept design analysis and modeling and simulation.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
194: *Engine Driven Gen Ed*	-	13.102	25.023	12.806	-	12.806	12.151	7.167	3.214	3.291	0.000	76.754
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 design power distribution equipment that is critical to deploying power networks. PDISE Expansion will add power distribution greater than 60kW. The Prime Power Connection Kit (PPCK) effort will fulfill prime power (medium-voltage, 4160 Volts Alternating Current (VAC)) distribution shortfalls to support Force Provider Expeditionary (FPE) and 249th Engineer Battalion (Prime Power) requirements. PPCK will provide updated power distribution capabilities for the U.S. Army Deployable Power Generation and Distribution System (DPGDS) and the U.S. Air Force Basic Expeditionary Airfield Resources (BEAR) power systems. The PPCK will incorporate advanced capabilities and include three primary components: an improved Secondary Distribution Center (iSDC), a Tactical Prime Power Transformer (TPPT), and an improved Primary Switching Center (iPSC).

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 Integrated Fire Control Network (IFCN) Relay 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.

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

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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*

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 2024 funds will support prototyping and engineering, manufacturing and development efforts for the Lightweight Portable Power System, STEP 3kW, PDISE Expansion power distribution solution, Integrated Fire Control Network (IFCN) Relay, and 120kW microgrids for the field hospitals.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Power Distribution Illumination Systems Electrical (PDISE) expansion	1.315	2.500	0.127
Description: Prepare PDISE- Prime effort by awarding the Prime Power Distribution System (PPDS) contract, developing Prime Power Connection Kit (PPCK) first article test (FAT) units and start developmental testing inclusive of the Improved Primary Switching Center (iPSC), Improved Secondary Distribution Center (iSDC), and Tactical Prime Power Transformer (TPPT). The PPCK 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 PPCK will enhance the existing Secondary Distribution Center (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 United States Air Force (USAF) Basic Expeditionary Airfield Resources (BEAR) power source or 13,800 VAC from contracted and commercial power sources or host nation/existing distribution systems. ***FY 2023 Plans:*** Revision and release of Prime Power Connection Kit (PPCK) solicitation package to industry. ***FY 2024 Plans:*** PPCK First Article Test build. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Reduction from FY23 to FY24 due to reduction in test build efforts.			
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:*** 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 2023 to FY 2024 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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 2022	FY 2023	FY 2024
FY23 to FY24 increases due to initiation of logistic documentation and developmental testing activities.			
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 power 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 2023 Plans:*** Begin STEP 3kW Engineering Manufacturing and Development (EMD) effort with 3 vendors and begin Hybrid Augmentation System (HAS) development. ***FY 2024 Plans:*** FY24 funds will support the continuation of the STEP 3kW. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Continuation of STEP 3KW EMD contract developmental efforts, which includes Critical Design Review (CDR).	7.593	10.939	11.100
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. ***FY 2023 Plans:*** FY23 funds will support prototype development and testing. ***FY 2024 Plans:*** FY24 funds will continue to support prototype development and complete testing. ***FY 2023 to FY 2024 Increase/Decrease Statement:***	0.370	1.036	1.079

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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 2022	FY 2023	FY 2024
Funding increased to support prototype testing.			
Title: Large Tactical Power System ***Description:*** LTPS provides mission critical power to the Army's Lower Tier Air & Missile Defense Sensor (LTAMDS), an AMD CFT modernization program. IAW DoDI 4120.11, LTPS will provide standardized mobile, durable and reliable tactical electric power above 60kW, to support Multi Domain Operations. The first procurement effort will be to produce and field Army standardized 500kW generators for emerging AMD CFT LTAMDS requirements. LTPS could potentially meet the power requirements of other large load demands such as field hospitals, airfields, and mission command nodes.	2.785	-	-
Title: SBIR/STTR ***FY 2023 Plans:*** SBIR/STTR transfer ***FY 2023 to FY 2024 Increase/Decrease Statement:*** SBIR/STTR transfer	-	0.548	-
Title: LAMPS contract termination ***Description:*** FY22 RDTE funds were used to execute the LAMPS contract termination settlement modification.	1.039	-	-
Accomplishments/Planned Programs Subtotals	13.102	15.023	12.806

	FY 2022	FY 2023
Congressional Add: Lightweight Portable Power ***FY 2023 Plans:*** FY23 Congressional funds to be executed on the prototyping and test and evaluation of lightweight, portable power systems.	-	10.000
Congressional Adds Subtotals	-	10.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• G11: *Adv Elec Energy Con Ad*	4.000	15.000	0.000	-	0.000	-	-	-	-	0.000	19.000
• MA9800: *Generators And Associated Equip*	106.120	112.689	78.364	-	78.364	83.661	91.456	104.272	104.475	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost

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 2 kilowatt (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 two 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 two lines of effort have changed and the STEP 3kW will enter development in 2QFY23 and the STEP LW will not enter acquisition lifecycle at MS C in 1QFY23 since 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 2QFY25. STEP 3kW system will enter development at MS B in 1QFY23. STEP Hybrid Augmentation Systems (STEP HAS) will begin development in 4Q FY23.

Power Distribution Illumination Systems Electrical (PDISE) provides the linkage between the generators and the Network/C3I, Air & Missile Defense, Long Range Precision Fires, Command Post and Combat Support/Combat Service Support systems. 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. PDISE expansion program = Prime Power Connection Kit (PPCK) inclusive of the Improved Primary Switching Center (iPSC), Improved Secondary Distribution Center (iSDC) and Tactical Prime Power Transformer (TPPT).

The acquisition strategy includes a 2-year Firm-Fixed Price (FFP) developmental contract in 1QFY24 that will develop a materiel solution to support Army Prime Power in addition to Force Provider Expeditionary contingency-base operations with a Prime Power Connection Kit (PPCK). The developmental contract includes the research, design, manufacturing, and delivery of first articles to support the developmental testing scheduled in 1QFY25. First article testing will be completed no later than 4QYF25 with follow-on operational assessment starting in 1QFY26.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
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 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PDISE Expansion	Various	PM E2S2 : Ft. Belvoir	1.275	-		1.000	Sep 2023	-		-		-	Continuing	Continuing	Continuing
STEP	TBD	PM E2S2 Ft. Belvior : PM E2S2 Ft. Belvior	0.082	3.122	Feb 2022	0.650	Jul 2023	0.656	Jan 2024	-		0.656	0.000	4.510	-
SBIR/STTR transfer	TBD	SBIR/STTR transfer : Ft. Belvoir	-	-		0.548		-		-		-	0.000	0.548	-
		Subtotal	1.357	3.122		2.198		0.656		-		0.656	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
STEP	TBD	Prototyping and engineering, manufacturing and development efforts : TBD	0.400	5.200	Sep 2022	10.089	Mar 2023	10.092	Mar 2024	-		10.092	0.000	25.781	-
PDISE Expansion	TBD	Prototyping and engineering, manufacturing and development efforts : TBD	-	-		1.400	Dec 2023	0.127	Apr 2024	-		0.127	0.000	1.527	-
Field Hospital Microgrid Integration	MIPR	DEVCOM RTI : Ft. Belvoir	-	-		-		0.500	Jun 2024	-		0.500	0.000	0.500	-
LAMPS Termination	TBD	contract termination : ft belvoir	-	1.039	May 2022	-		-		-		-	0.000	1.039	-
Lightweight Portable Power	TBD	Enginuity Power Systems (MI, VA) : West Virginia University (WV)	-	-		10.000	Jul 2023	-		-		-	0.000	10.000	-
		Subtotal	0.400	6.239		21.489		10.719		-		10.719	0.000	38.847	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army		Date: March 2023
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*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Large Tactical Power Systems	TBD	contract support : ft belvoir	-	2.785	Dec 2022	-		-		-		-	0.000	2.785	-
STEP	TBD	PM E2S2 Ft. Belvior : PM E2S2 Ft. Belvior	0.120	0.586	Sep 2022	0.200	Jun 2023	0.210	Jan 2024	-		0.210	0.000	1.116	-
IFCN	TBD	PM E2S2 Ft. Belvoir : PM E2S2 Ft. Belvoir	0.316	0.370	Jul 2022	1.036	Jun 2023	1.079	Oct 2023	-		1.079	0.000	2.801	-
PDISE Expansion	Various	PM E2S2 : Ft. Belvoir	-	-		0.100	Dec 2023	-		-		-	0.000	0.100	-
		Subtotal	0.436	3.741		1.336		1.289		-		1.289	0.000	6.802	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
STEP	TBD	PM E2S2 Ft. Belvior : PM E2S2 Ft. Belvior	-	-		-		0.142	Jan 2024	-		0.142	0.000	0.142	-
		Subtotal	-	-		-		0.142		-		0.142	0.000	0.142	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.193	13.102		25.023		12.806		-		12.806	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
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*

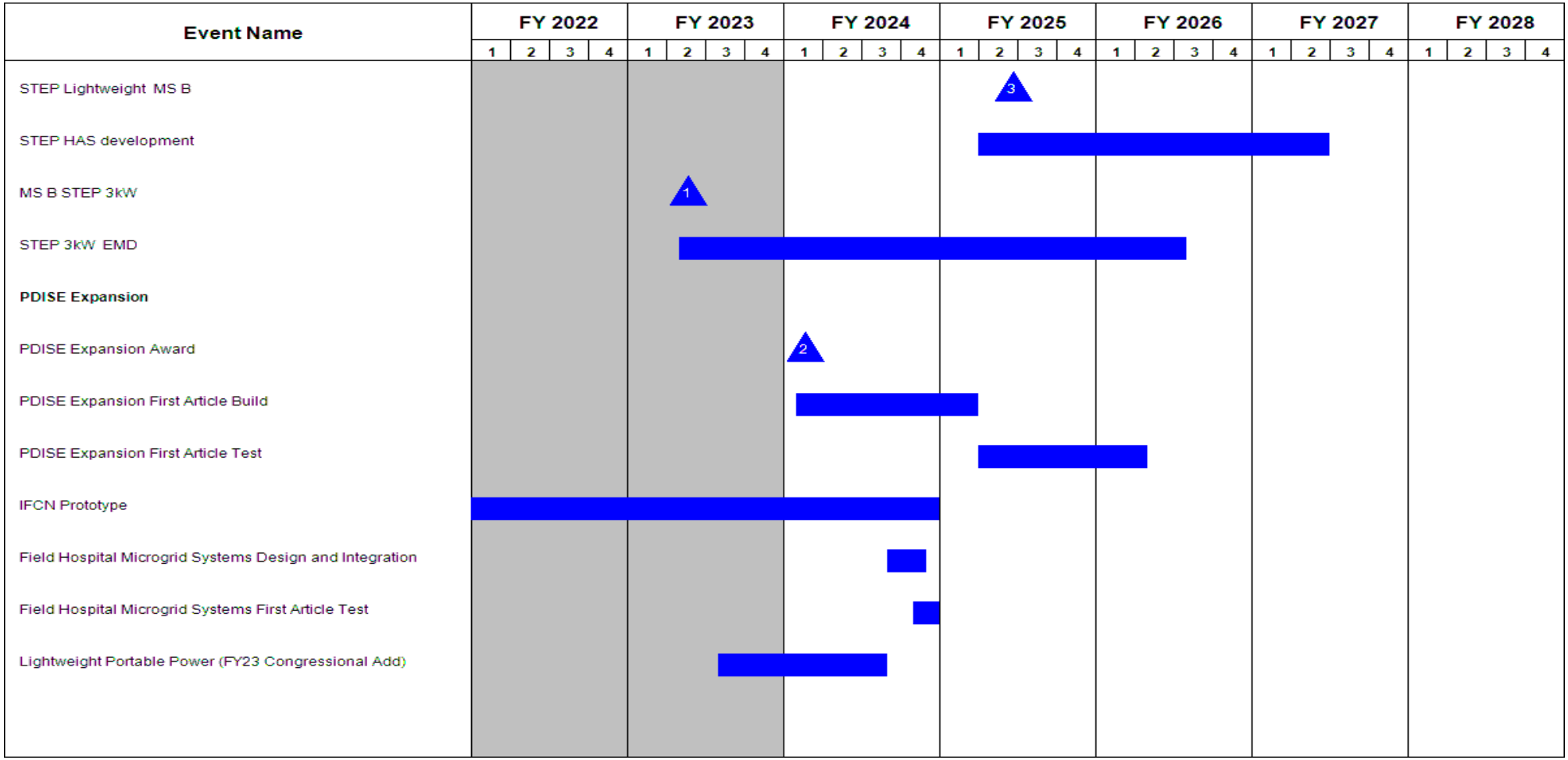

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
STEP Lightweight MS B	2	2025	2	2025
STEP HAS development	2	2025	2	2027
MS B STEP 3kW	2	2023	2	2023
STEP 3kW EMD	2	2023	3	2026
PDISE Expansion	3	2021	4	2029
PDISE Expansion Award	1	2024	1	2024
PDISE Expansion First Article Build	1	2024	1	2025
PDISE Expansion First Article Test	2	2025	2	2026
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 2024 Army			Date: March 2023
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
EJ9: *Maneuver Support Vessel (MSV)*	-	4.175	9.473	7.827	-	7.827	-	-	-	-	0.000	21.475
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project line supports the family of Maneuver Support Vessels (MSV) that support 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) and Maneuver Support Vessel (Heavy), which are the Army's first digital architecture vessels (with improved draft, speed, and payload) and critical modernization efforts in support of the Army's Watercraft Systems Transformation Strategy (AWSTS). 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 Maneuver Support Vessel (Light) - 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.

MSV(L) completes the Engineering and Manufacturing Development (EMD) phase in FY23 and delivers producing the single full scale prototype. The prototype will undergo contractor and government testing, which will inform the updated Joint Capabilities Integration Development System (JCIDS) requirements documentation at MS C. 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

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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)*

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.

FY 2024 RDTE dollars in the amount of $7.827 million supports the family of Maneuver Support Vessels requirements development process with analysis and concept design to address approved requirements.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Program Management / Systems Engineering ***Description:*** PM/Matrix Support includes PM and systems engineering oversight required to manage the program and provide contractor oversight. Salaries for support through the EMD phase of MSV(L) and start MSV(H) in FY 2022. ***FY 2023 Plans:*** Funds matrix support, travel, and general oversight efforts. ***FY 2024 Plans:*** Funds matrix support, travel, and general oversight efforts. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** The FY 2024 increase is due to additional support required to facilitate requirements development.	0.500	0.605	0.723
Title: Maneuver Support Vessel Affordability and Feasibility Studies ***Description:*** Conduct Affordability and Feasibility Studies for future watercraft modernization. ***FY 2023 Plans:*** Funding needed to complete feasibility studies and Affordability Analysis. ***FY 2024 Plans:*** Conduct analysis development to complete affordability and feasibility studies. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** The FY 2024 decrease is due to the completion of feasibility studies.	0.453	1.778	1.457
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC §638 ***FY 2023 Plans:*** SBBR/STTR Tax $90K ***FY 2023 to FY 2024 Increase/Decrease Statement:***	-	0.090	-

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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 2022	FY 2023	FY 2024
decrease due to SBIR/STTR transfer of 90K			
Title: MSV(H) Requirements Development ***Description:*** Collaborative effort with industry and Government to inform MSV(H) desired characteristics. ***FY 2024 Plans:*** Funding supports MSV(H) requirements development process with analysis of A-CDD desired characteristics. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** The FY 2024 increase is due to new efforts associated with industry and Government collaboration to inform MSV(H) desired characteristics through concept design analysis and modeling and simulation.	-	-	5.647
Title: MSV(L) EMD ***Description:*** MSV(L) EMD Close Out ***FY 2023 Plans:*** $7M to fund MSV(L) EMD ***FY 2023 to FY 2024 Increase/Decrease Statement:*** MSV(L) EMD Phase fully completed in FY23.	3.222	7.000	-
Accomplishments/Planned Programs Subtotals	4.175	9.473	7.827

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• R03050: *Maneuver Support Vessel (Light) (MSV-L)*	76.660	97.676	149.449	-	149.449	42.027	31.077	13.353	13.365	0.000	423.607

Remarks

Significant Accomplishments:
-Prototype Launch and Extended Acceptance Trials
- Milestone C Documentation generated and submitted into staffing.
- MSV(L) EMD REAs funded

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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)*

D. Acquisition Strategy

MSV(L) completes the Engineering and Manufacturing Development (EMD) phase in FY23 and delivers producing the single full scale prototype. The single full scale prototype will undergo contractor and government testing, which will inform the updated Joint Capabilities Integration Development System (JCIDS) requirements documentation at MS C. Following prototype testing the prototype vessel may be used as a test bench for future modifications and or a training asset.

MSV(H): competitive design efforts will result in digital prototype. MSV(H) acquisition strategy maximizes competition at every phase of design, prototyping, and test to yield the most affordable position for the Army in the program's production phase.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
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)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.090		-		-		-	Continuing	Continuing	-
		Subtotal	-	-		0.090		-		-		-	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Trade Studies and Business Analysis	TBD	Various : Various	0.264	0.453	Nov 2021	1.778	May 2023	1.457	Nov 2023	-		1.457	Continuing	Continuing	-
MSV Requirements Development	TBD	TBD : TBD	-	-		-		5.647	Feb 2024	-		5.647	0.000	5.647	-
MSV(L) EMD	SS/ FPEPA	VIGOR LLC : Portland, OR	77.755	3.222	Jan 2023	7.000	Mar 2023	-		-		-	0.000	87.977	-
		Subtotal	78.019	3.675		8.778		7.104		-		7.104	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 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	21.220	0.500	Dec 2021	0.605	Jan 2023	0.723	Dec 2023	-		0.723	0.000	23.048	-
Salaries / Travel for Program Management Support Contracts	C/CPFF	Picatinny Arsenal, New Jersey 07806-5000 : Warren, MI 48397-5000	5.824	-		-		-		-		-	0.000	5.824	-
		Subtotal	27.044	0.500		0.605		0.723		-		0.723	0.000	28.872	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
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)*	

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	105.063	4.175		9.473		7.827		-		7.827	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
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)*

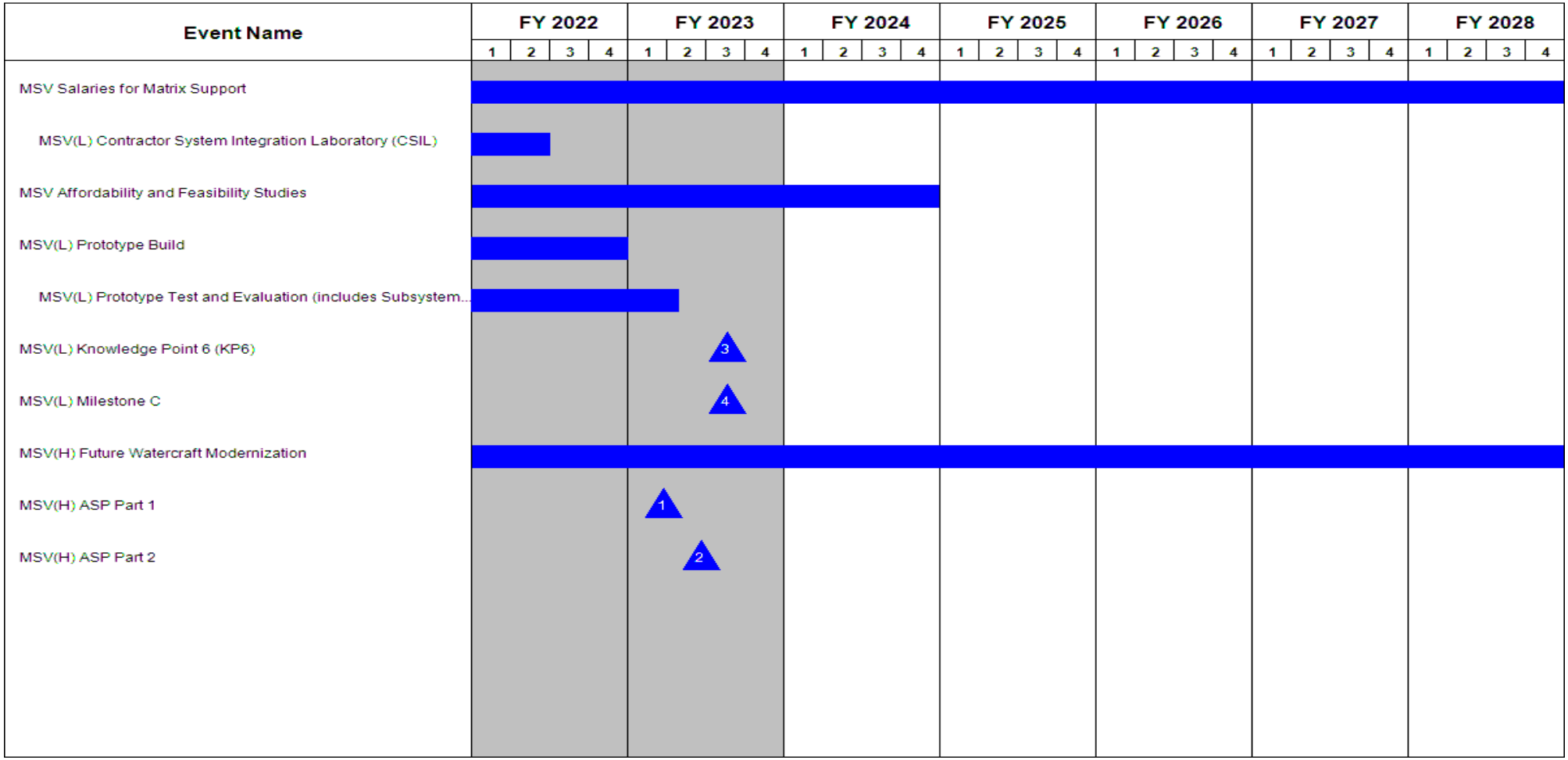

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Maneuver Support Vessel (MSV)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MSV Salaries for Matrix Support	4	2016	4	2028
MSV(L) Contractor System Integration Laboratory (CSIL)	4	2018	2	2022
MSV Affordability and Feasibility Studies	1	2022	4	2024
MSV(L) Prototype Build	4	2019	4	2022
MSV(L) Prototype Test and Evaluation (includes Subsystem tests)	4	2019	2	2023
MSV(L) Knowledge Point 6 (KP6)	3	2023	3	2023
MSV(L) Milestone C	3	2023	3	2023
MSV(H) Future Watercraft Modernization	1	2022	4	2028
MSV(H) ASP Part 1	1	2023	1	2023
MSV(H) ASP Part 2	2	2023	2	2023

Note

Family of Maneuver Support Vessels: Maneuver Support Vessel (Light), (MSV(L)) and Maneuver Support Vessel (Heavy), MSV(H).

FY24 funds are used to initiate competitive design efforts which will result in digital prototype.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
FG4: *Ultra-Lightweight Camouflage Net System (ULCANS)*	-	1.100	5.000	-	-	-	-	-	-	-	0.000	6.100
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 2022	FY 2023	FY 2024
Title: Ultra-Lightweight Camouflage Net System (ULCANS) ***Description:*** ATR approved for support of Snow/Alpine testing	1.100	-	-
Accomplishments/Planned Programs Subtotals	1.100	-	-

	FY 2022	FY 2023
Congressional Add: Mobile Camouflage Systems (MCS)	-	5.000
FY 2023 Plans: 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 "coupon" which will allow		

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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)*

	FY 2022	FY 2023
for a scalable and customizable solution to fit many different vehicle and weapons systems. 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

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 is the last remaining variant to achieve FRP/TC-STD and FMR. All testing and observer trials have been complete. The FRP/TC-STD milestone will be approved March 2023 with FMR being scheduled for 3QFY23. MCS CDD entry gate scheduled for 4thQTR FY22, followed by full scale prototype for surrogate platform delivered by vendors. MCS will move through the entry gate process and become a requirement.

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 to include the GFE MCS solution for OMFV, and MCS endorsement between ELRV, SOCOM FOSOV, ERCA, LRPF, Mission Command Battle Lab, and the NGCV CFT. 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 2024 Army			Date: March 2023
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 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ULCANS	TBD	Various : PM FSS : Natick, MA	-	0.210	Jan 2023	-		-		-		-	0.000	0.210	-
MCS	TBD	Various : PM FSS : Natick, MA	-	-		1.402	Oct 2023	-		-		-	0.000	1.402	-
		Subtotal	-	0.210		1.402		-		-		-	0.000	1.612	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MCS	TBD	Various : Various	-	-		2.098	Jul 2023	-		-		-	0.000	2.098	-
		Subtotal	-	-		2.098		-		-		-	0.000	2.098	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ULCANS	TBD	Various : Various	-	0.100	Mar 2023	-		-		-		-	0.000	0.100	-
MCS	TBD	Various : Various	-	-		0.250	Aug 2023	-		-		-	0.000	0.250	-
		Subtotal	-	0.100		0.250		-		-		-	0.000	0.350	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ULCANS	TBD	Various : Various	-	0.790	Dec 2022	-		-		-		-	0.000	0.790	-
MCS	TBD	Various : Various	-	-		1.250	May 2023	-		-		-	0.000	1.250	-
		Subtotal	-	0.790		1.250		-		-		-	0.000	2.040	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
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)*	

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	1.100		5.000		-		-		-	0.000	6.100	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
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)*

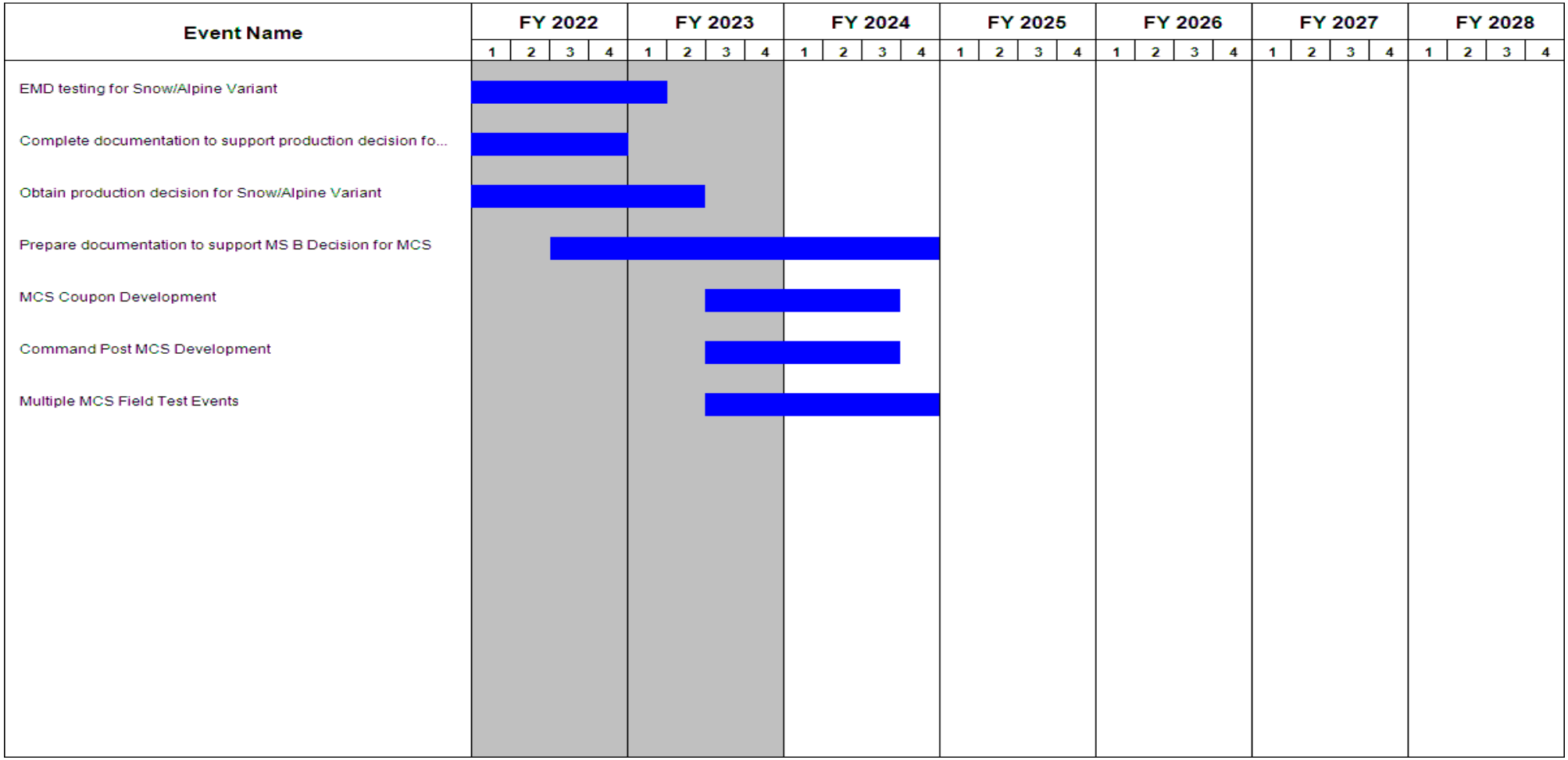

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** FG4 / *Ultra-Lightweight Camouflage Net System (ULCANS)*

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 Coupon Development	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 2024 Army			Date: March 2023
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
H02: *Tactical Bridging - Engineering Development*	-	16.525	8.528	-	-	-	-	-	-	-	0.000	25.053
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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), 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 development, test, and evaluation of upgrades / modernization of the Joint Assault Bridge (JAB) and Assault Breacher Vehicle (ABV) M1A1 base chassis to the standard Army M1A2 SEPv3 configuration (hereafter referred to as "M1A2 upgrade") in order to improve maintainability and supportability, minimize impacts of obsolescence, and establish commonality with the current Abrams Main Battle Tank (MBT) system. Funding also supports the development of new systems and modification of existing systems within the Bridging portfolio to enhance the Army's Engineering capabilities.

FY 2024 has no budget request.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Line of Communication Bridge (LOCB)	8.777	4.311	-
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. ***FY 2023 Plans:*** Funding supports the continuation and close-out of LOCB testing. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** RDTE efforts for the LOCB program ends in FY23 with the completion of testing.			
Title: Bridge Supplemental Set (BSS)	1.160	-	-
Description: Funding to develop a multi-functional, consolidated engineering set consisting of an anchorage system, access/ egress traction improvement matting, power generation, tools, and a float Bridge Protection Device (BPD). The BSS is targeted			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
for use with multiple tactical bridging systems to include the Improved Ribbon Bridge (IRB). It will increase the capability of the Multi-Role Bridging Company (MRBC).			
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. ***FY 2023 Plans:*** Funding supports development and testing of product improvements and various operational configurations for increased MLC rating of the Improved Ribbon Bridge (IRB). ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY23 is the last year of program funding for FOHMLC	4.223	3.506	-
Title: M1A2 Chassis Upgrade of Joint Assault Bridge (JAB) and Assault Breacher Vehicle (ABV) ***Description:*** Funding requested for Joint Assault Bridge (JAB) / Assault Breacher Vehicle (ABV) M1A2 Chassis modernization development. Efforts will focus on enhanced reliability, maintainability and chassis commonality with the Abrams M1A2 Main Battle Tank system.	0.365	-	-
Title: Bridge Erection Boat (BEB) ***Description:*** Funding supports the development and testing of a weapon mount for the Bridge Erection Boat (BEB) in order to satisfy a user requirement for the BEB to safely and effectively conduct river patrols. ***FY 2023 Plans:*** BEB program moved from FY22 to FY23 due to additional requirements needed for Weapons Mount Test and Evaluation. $160k for Weapons Mount Development and $240k for ATEC Weapons Mount Test and Evaluation moved to FY23. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease due to development activities ending in FY 2024.	-	0.400	-
Title: SBIR/STTR Transfer ***Description:*** SBIR/STTR Transfer ***FY 2023 Plans:***	-	0.311	-

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Funding transferred in accordance with Title 15 USC §638			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638			
Accomplishments/Planned Programs Subtotals	14.525	8.528	-

	FY 2022	FY 2023
Congressional Add: Program increase - national hydrography dataset	2.000	-
FY 2022 Accomplishments: Funding supports the development of a national hydrography dataset.		
Congressional Adds Subtotals	2.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• G06520: *BRIDGE SUPPLEMENTAL SET*	19.867	0.439	4.414	-	4.414	-	-	-	-	0.000	24.720
• G82404: *LINE OF COMMUNICATION BRIDGE LOCB*	9.625	13.785	0.000	-	0.000	-	-	-	-	0.000	23.410
• GZ3001: *Joint Assault Bridge*	110.588	36.990	159.804	-	159.804	180.097	142.708	179.259	213.572	0.000	1,023.018
• G84900: *ASSAULT BREACHER VEHICLE (ABV)*	16.454	3.852	0.000	-	0.000	-	10.181	10.194	10.203	0.000	50.884
• M27200: *BRIDGE, FLOAT-RIBBON, PROPULSION*	74.182	-	42.559	-	42.559	30.748	-	-	-	0.000	147.489

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 2024 Army			Date: March 2023
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 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering and Program Management	MIPR	Various : Various	3.481	0.812	Dec 2022	1.129	Aug 2023	-		-		-	0.000	5.422	-
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.311	Feb 2023	-		-		-	0.000	0.311	-
		Subtotal	3.481	0.812		1.440		-		-		-	0.000	5.733	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Line of Communication Bridge - 130m Float Bridge PQT System - AGL	SS/FFP	Acrow Global Limited (AGL) (formerly Mabey Bridge Limited) : Lydney, UK	-	6.993	Sep 2022	-		-		-		-	0.000	6.993	-
Family of High Military Load Class Bridges - HASB MLC120 Prototypes	MIPR	Anniston Army Depot (ANAD) : Anniston, AL	-	1.443	Apr 2022	0.350	Aug 2023	-		-		-	0.000	1.793	-
Bridge Erection Boat - Weapon Mount Development	C/TBD	TBD : TBD	-	-		0.160	Mar 2023	-		-		-	0.000	0.160	-
BSS - Prototype Manufacturing	MIPR	Tobyhanna Army Depot TYAD : Tobyhanna, PA	-	0.651	Jan 2023	-		-		-		-	0.000	0.651	-
		Subtotal	-	9.087		0.510		-		-		-	0.000	9.597	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Bridge Test Lab	MIPR	CCDC GVSC - Bridge Test Lab : SANGB, MI	1.043	-		0.260	Nov 2022	-		-		-	0.000	1.303	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
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*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prototype/EMD Bridge Test Asset Transportation	TBD	TAC Code : TBD	0.266	-		0.050	Apr 2023	-		-		-	0.000	0.316	-
Program increase - national hydrography dataset	TBD	TBD : TBD	-	2.000	Jul 2022	-		-		-		-	0.000	2.000	-
LOCB - Modeling and Simulation	MIPR	DEVCOM ANALYSIS CENTER (DAC) : APG, MD	-	0.098	Jan 2023	-		-		-		-	0.000	0.098	-
		Subtotal	1.309	2.098		0.310		-		-		-	0.000	3.717	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Line of Communication Bridge - PQT Transportability Testing	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	2.554	0.946	Aug 2022	3.216	Jun 2023	-		-		-	0.000	6.716	-
Line of Communication Bridge - PQT Durability Testing	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	2.305	-		1.100	Mar 2023	-		-		-	0.000	3.405	-
Line of Communication Bridge - Customer Testing (CT)	MIPR	Operational Test Command (OTC) : Fort Hood, TX	-	-		0.312	Mar 2023	-		-		-	0.000	0.312	-
Family of High Military Load Class Bridges - DSB - Durability Testing	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	-	1.474	Jun 2022	-		-		-		-	0.000	1.474	-
Family of High Military Load Class Bridges - IRB Test & Evaluation	MIPR	US Army Corps of Engineers - Engineering Research and Development Center	-	1.306		1.400	Mar 2023	-		-		-	0.000	2.706	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
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 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		(ERDC) : Vicksburg, MS													
Bridge Supplemental Set - BPD Test & Evaluation	MIPR	US Army Corps of Engineers - Engineering Research and Development Center (ERDC) : Vicksburg, MS	0.500	0.475	Sep 2022	-		-		-		-	0.000	0.975	-
Bridge Erection Boat - Weapon Mount Testing	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	-	-		0.240	Jun 2023	-		-		-	0.000	0.240	-
Line of Communication - ERDC - GSL Fatigue Testing/Pull Test	MIPR	ERDC - GSL : Vicksburg, MS	-	0.327	Dec 2023	-		-		-		-	0.000	0.327	-
		Subtotal	5.359	4.528		6.268		-		-		-	0.000	16.155	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	10.149	16.525		8.528		-		-		-	0.000	35.202	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
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*

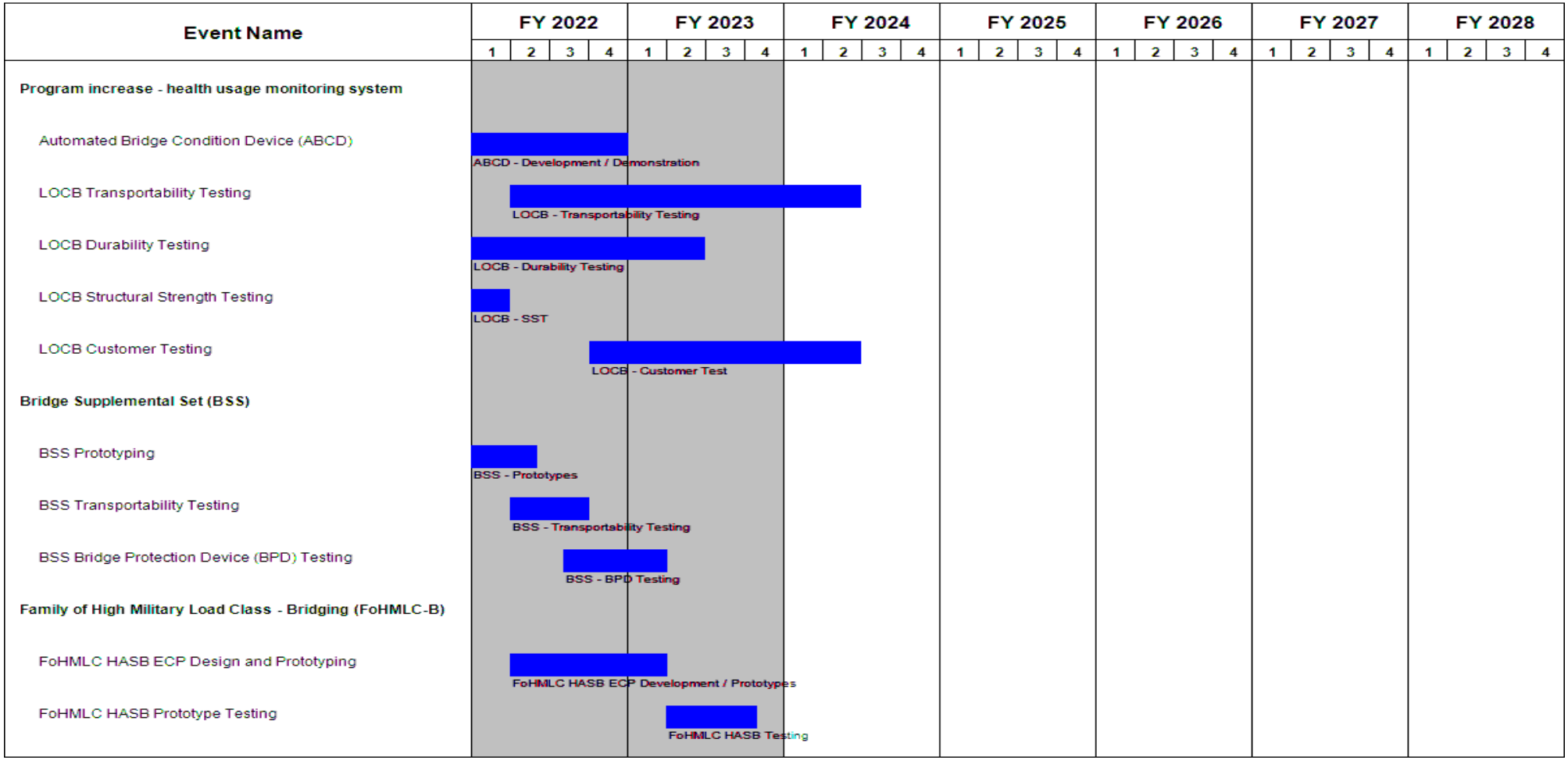

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

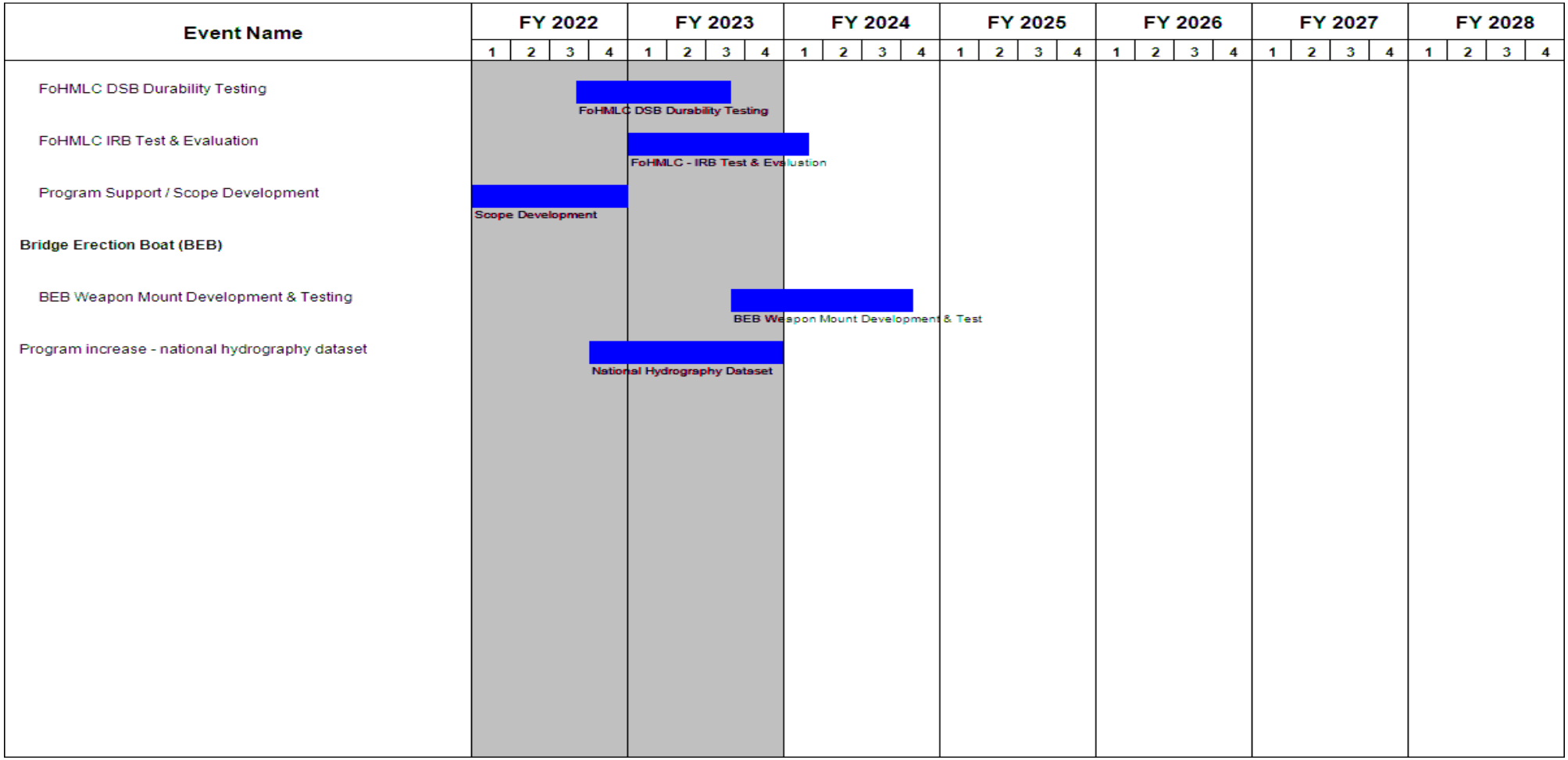

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

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
Line Of Communication Bridge (LOCB)	2	2012	4	2021
LOCB Milestone "C"	3	2021	3	2021
LOCB Transportability Testing	1	2020	2	2024
LOCB Durability Testing	2	2020	2	2023
LOCB Structural Strength Testing	3	2021	1	2022
LOCB Customer Testing	4	2022	2	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	2023
FoHMLC HASB Prototype Testing	2	2023	4	2023
FoHMLC DSB Durability Testing	3	2022	3	2023
FoHMLC IRB Test & Evaluation	1	2023	1	2024
Program Support / Scope Development	1	2022	4	2022
Bridge Erection Boat (BEB)	2	2023	2	2024
BEB Weapon Mount Development & Testing	3	2023	4	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
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*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Program increase - national hydrography dataset	4	2022	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
L39: *Field Sustainment Support Ed*	-	2.216	1.847	4.824	-	4.824	3.790	3.070	3.103	3.138	0.000	21.988
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 2022	FY 2023	FY 2024
Title: Rapid Rigging and De-Rigging Airdrop System (RRDAS)	2.216	1.780	3.285
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 2023 Plans: Complete development of RRDAS-Light including logistics support products and start Operational Testing. Start development of RRDAS-Heavy components.			
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 2023 to FY 2024 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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 2022	FY 2023	FY 2024
FY2024 increase is provided to continue and complete design validation and continue developmental testing.			
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 2023 to FY 2024 Increase/Decrease Statement:*** FY24 Increase is due to the start of JPADS M-Code hardware/software development, test and integration.	-	-	1.539
Title: SBIR/STTR Transfer ***FY 2023 Plans:*** SBIR/STTR Reductions ***FY 2023 to FY 2024 Increase/Decrease Statement:*** SBIR/STTR Reductions	-	0.067	-
Accomplishments/Planned Programs Subtotals	2.216	1.847	4.824

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• MA7806: *Precision Airdrop*	2.081	-	6.513	-	6.513	4.284	4.313	4.317	4.321	0.000	25.829

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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*

D. Acquisition Strategy

The acquisition strategy for RRDAS is complete development of the airdrop platform, complete developmental and operational testing 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, conduct flight testing and update drawing package with approved engineering change proposal.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
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 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management Support	Various	PM FSS : Natick, MA	6.516	0.395	Jun 2022	0.530	Apr 2023	0.723	Dec 2023	-		0.723	0.000	8.164	Continuing
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.067	Feb 2023	-		-		-	0.000	0.067	-
		Subtotal	6.516	0.395		0.597		0.723		-		0.723	0.000	8.231	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JPADS	Various	Various : Various	3.055	-		-		0.821	Oct 2023	-		0.821	0.000	3.876	-
RRDAS	Various	Various : Various	2.498	0.453	Jun 2022	0.750	Apr 2023	1.280	Nov 2023	-		1.280	0.000	4.981	-
		Subtotal	5.553	0.453		0.750		2.101		-		2.101	0.000	8.857	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JPADS	Various	Various : Various	0.256	-		-		0.100	Dec 2023	-		0.100	0.000	0.356	-
RRDAS	Various	Various : Various	-	-		-		0.120	Dec 2023	-		0.120	0.000	0.120	-
		Subtotal	0.256	-		-		0.220		-		0.220	0.000	0.476	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JPADS	Various	Various : Various	2.174	-		-		0.500	Jan 2024	-		0.500	0.000	2.674	-
RRDAS	Various	Various : Various	1.350	1.368	Jan 2022	0.500	Aug 2023	1.280	Mar 2024	-		1.280	0.000	4.498	-
		Subtotal	3.524	1.368		0.500		1.780		-		1.780	0.000	7.172	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
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 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	15.849	2.216		1.847		4.824		-		4.824	0.000	24.736	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
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*

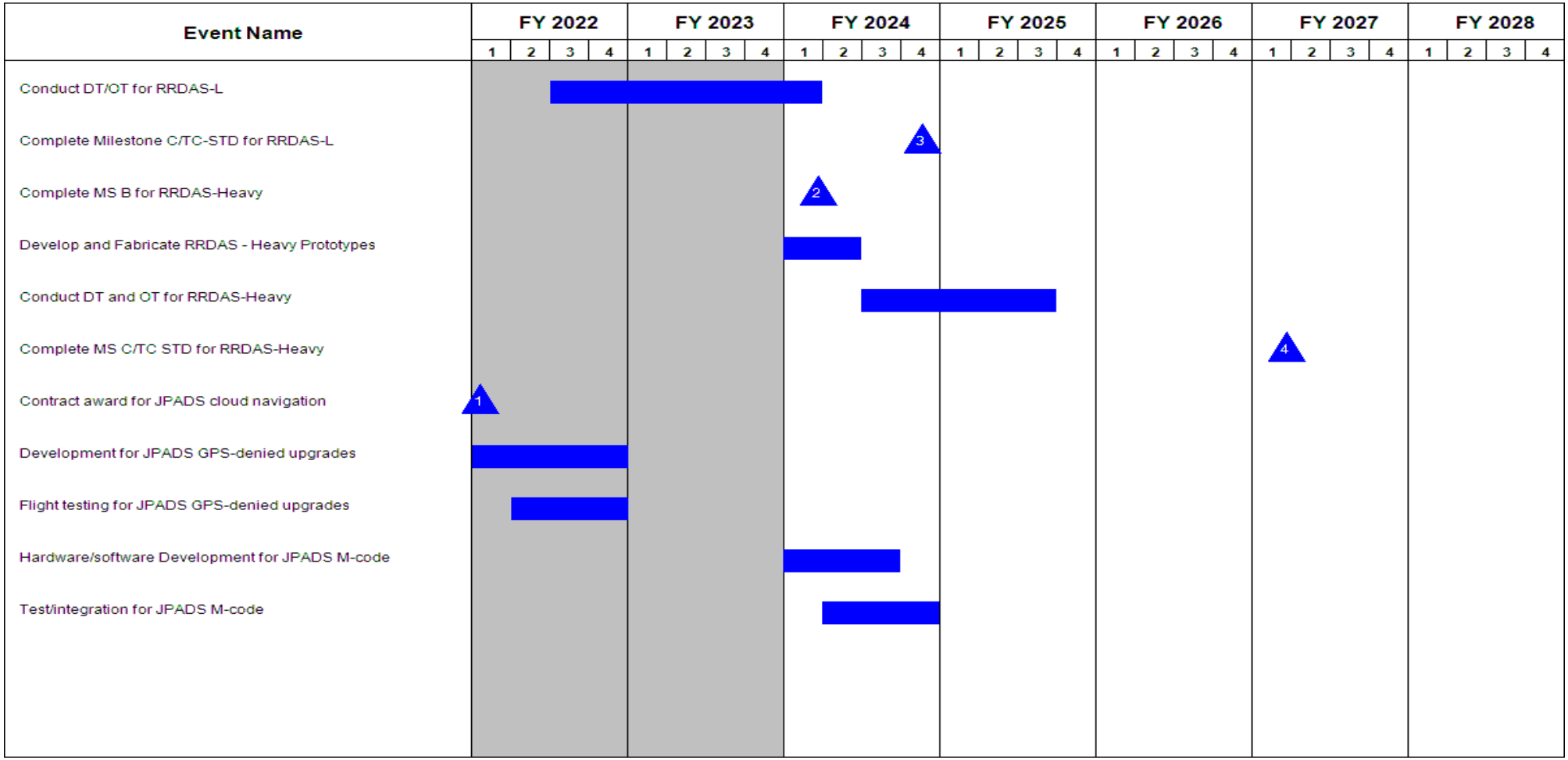

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Conduct DT/OT for RRDAS-L	3	2022	1	2024
Complete Milestone C/TC-STD for RRDAS-L	4	2024	4	2024
Complete MS B for RRDAS-Heavy	1	2024	1	2024
Develop and Fabricate RRDAS - Heavy Prototypes	1	2024	2	2024
Conduct DT and OT for RRDAS-Heavy	3	2024	3	2025
Complete MS C/TC STD for RRDAS-Heavy	1	2027	1	2027
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

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
L41: *Water And Petroleum Distribution - Ed*	-	8.242	7.921	7.543	-	7.543	2.013	-	-	-	0.000	25.719
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 (Camel).

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.

FY24 Base RDTE $7.543 million provides for Petroleum Expeditionary Analysis Kit (PEAK) Production Qualification Testing (PQT), Water Bison 500g PQT/User Jury, Tactical Fuel Distribution System (TFDS) Production Qualification Testing (PQT), Ballistic and Transportation Testing, Chemical Biological Radiation Nuclear (CBRN) Water Hauler Design/Packaging Engineering, Production Qualification Testing (PQT) and Transportation Testing. 3k Tactical Water Purification System (3k TWPS) will conduct a Source Selection Evaluation Boards (SSEBs) after completing development of a level 3 Technical Data Package (TDP) and contract award. Funding also provides continued testing and engineering support for Bulk Fuel Distribution System (BFDS), and Water and Storage System (WSDS).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
Title: Water Bison / Bison Lite	0.858	1.472	0.483

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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 2022	FY 2023	FY 2024
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 2023 Plans:*** Bison - Start of Production Qualification Testing and User Jury ***FY 2024 Plans:*** Bison - System engineering test management ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease due to PQT completion in FY24.			
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. ***FY 2023 Plans:*** Completion of Customer Event / Maintenance Demos and Software Int Lab Cyber Security Scan ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Program will transition to 100% OPA in FY24	0.318	0.359	-
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.	0.495	0.306	1.069

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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 2022	FY 2023	FY 2024
FY 2023 Plans: PEAK requires funding to complete Production Qualification Testing, Customer Testing and Limited User Test (LUT) ***FY 2024 Plans:*** PEAK - System engineering test management and travel for FY24 portion of Production Qualification Testing ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase form FY23 to FY24 to pay for PEAK Production Qualification Testing			
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 2023 Plans:*** Completion of Prototype Run-off testing for contractor down select, Milestone C decision and award of LRIP production. ***FY 2024 Plans:*** TFDS - Production Qualification Testing (PQT) / Helicopter Sling Load and Transport Testing ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding increased due to multiple funded test events to include Production Qualification Testing, LRIP Ballistics Testing and multiple transportation testing events. TFDS also plans on conducting a User Jury and other Limited User Testing (LUT).	3.856	0.370	3.480
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. ***FY 2023 Plans:***	1.343	0.996	-

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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 2022	FY 2023	FY 2024
Completion of HIPPO Customer Testing and Limited User Test (LUT) ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease due to HIPPO test completion in FY 2023.			
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 2023 Plans:*** Completion of incrementally funded Production Qualification Testing started in FY22. ***FY 2024 Plans:*** SEPM for Test Engineer, final PQT report for Full Rate Production Decision. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease due to BFDS test completion in FY23. FY24 funding will continue system developmental engineering and test planning/ system management.	0.515	1.409	0.150
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. ***FY 2023 Plans:*** Completion of Production Qualification Testing, Customer Testing and Limited User Test (LUT). ***FY 2023 to FY 2024 Increase/Decrease Statement:***	0.070	0.961	-

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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 2022	FY 2023	FY 2024
Decrease due to WSDS test completion in FY23.			
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 2023 Plans:*** Award of Modular Fuel System (MFS) Tank Rack Module (TRM) - M107 40gpm Pump Modification Kit Prototype Testing at APG ***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 2023 to FY 2024 Increase/Decrease Statement:*** Funding changes reflects planned lifecycle of this effort	0.722	1.210	0.150
Title: 3k Tactical Water Purification Sys. (3k TWPS) ***FY 2023 Plans:*** Award of 3K TWPS prototype test assets ***FY 2024 Plans:*** 3k TWPS - System engineering management and completion of TDP/P-Spec ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding decreased as program finishes FY23 funded level Tech Data Package/drawing updates and conducts a Source Selection Evaluation Boards (SSEBs) in FY24 for LRIP hardware award. FY24 funding will continue system developmental engineering and test planning/system management. Program funding will increase in FY25 to conduct Production Qualification Testing (PQT) and move program toward Full Rate Production (FRP).	0.065	0.549	0.300
Title: Chemical Biological Radiological Nuclear (CBRN) Water Hauler	-	-	1.911

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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 2022	FY 2023	FY 2024
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 2023 to FY 2024 Increase/Decrease Statement:*** Funding increased due to CBRN prototype production and increase to system engineering and test management support. Production Qualification Testing (PQT) will also be funded out of FY24 for a FY24-25 test event.			
Title: SBIR/STTR Transfer ***FY 2023 Plans:*** SBIR/STTR Transfer ***FY 2023 to FY 2024 Increase/Decrease Statement:*** SBIR/STTR Transfer	-	0.289	-
Accomplishments/Planned Programs Subtotals	8.242	7.921	7.543

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• MA6000: *Distribution Systems, Petroleum & Water*	72.296	26.433	40.989	-	40.989	65.753	92.788	106.231	107.811	0.000	512.301
• D02001: *Semitrailers, tankers*	17.985	19.369	40.359	-	40.359	71.510	103.419	106.628	106.719	0.000	465.989
• MA4502: *INSTALLATION OF MODIFICATIONS*	4.240	6.957	5.833	-	5.833	8.352	5.706	5.709	5.714	Continuing	Continuing
• MB6400: *QUALITY SURVEILLANCE EQUIPMENT*	0.744	1.845	2.507	-	2.507	2.946	7.663	7.669	7.675	0.000	31.049

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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*

D. Acquisition Strategy

Develop engineering prototypes for the Chemical Biological Radiation Nuclear (CBRN) Water Hauler and select Non-Development Item (NDI) based on market surveys and proposals from industry. Conduct industry days and based on additional market research will award either competitive or sole source contracts. Conduct Integrated Product Team (IPT's) and develop acquisition strategies 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 2024 Army		Date: March 2023
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 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Matrix Spt / GVSC Engineering Spt	MIPR	Various TACOM : Warren, MI	3.009	2.531	Jan 2022	2.355	Jan 2023	2.603	Jan 2024	-		2.603	0.000	10.498	-
SBIR/STTR Transfer	TBD	SBBR/STTR Transfer : SBBR/ STTR Transfer	-	-		0.289	Feb 2023	-		-		-	0.000	0.289	-
		Subtotal	3.009	2.531		2.644		2.603		-		2.603	0.000	10.787	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TFDS - Contract Prototype Award (OTA)	C/FFP	TBD - OTA - Mulitple Contractors : Multiple	0.372	2.315	Mar 2022	-		-		-		-	0.000	2.687	-
MFS TRM - Kit Int. Design/ Eng. Pump Modification Upgrade + Test Assets	SS/FFP	ISOMETRICS : Reidsville, NC	-	0.420	Aug 2022	-		-		-		-	0.000	0.420	-
TFDS - Ballistic Study	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	0.428	May 2022	-		-		-		-	0.000	0.428	-
CBRN - Design/Packaging Engineering	MIPR	Combat Capabilities Development Command (DEVCOM) Ground Vehicle Systems Center (GVSC) : TACOM Warren, MI	-	-		-		0.550	Nov 2023	-		0.550	0.000	0.550	-
3K TWPS - Tech Data Package Update	MIPR	GVSC : Warren, MI	-	-		0.300	Apr 2023	-		-		-	0.000	0.300	-
		Subtotal	0.372	3.163		0.300		0.550		-		0.550	0.000	4.385	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
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*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Bison - User Jury	MIPR	TBD : TBD	-	-		-		0.120	Apr 2024	-		0.120	0.000	0.120	-
TFDS - User Jury	MIPR	TBD : TBD	-	-		-		0.200	Mar 2024	-		0.200	0.000	0.200	-
E2FDS Maintenance Demo	MIPR	TBD : TBD	-	-		0.085	Jul 2023	-		-		-	0.000	0.085	-
		Subtotal	-	-		0.085		0.320		-		0.320	0.000	0.405	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PEAK - Protoype Dev Test - Fly Off Testing	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	0.305	-		-		-		-		-	0.000	0.305	-
TFDS - Prototype Run-Off Testing	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	0.450	Apr 2022	-		-		-		-	0.000	0.450	-
TFDS - Production Qualification / HSL / Transport	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		-		2.000	Feb 2024	-		2.000	0.000	2.000	-
TFDS - Ballistics Test	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		-		0.570	Aug 2024	-		0.570	0.000	0.570	-
HIPPO - PQT / FAT / HSL / Transportability Testing	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	0.200	1.310	May 2022	0.770	Dec 2022	-		-		-	0.000	2.280	-
Bison - KRC - Prototype Testing	C/FFP	Keweenaw Research Center : Calumet, MI	-	0.470	Mar 2022	-		-		-		-	0.000	0.470	-
MFS TRM - Mod Kit Prototype Testing	MIPR	Army Test Center : Yuma, AZ	-	-		0.850	Feb 2023	-		-		-	0.000	0.850	-
BFDS - Production Qualification Test	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		1.250	Mar 2023	-		-		-	0.000	1.250	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
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 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PEAK - Production Qualification Testing / Cust. Test (LUT)	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		-		0.700	Nov 2023	-		0.700	0.000	0.700	-
WSDS - Production Qualification Testing / Cust. Test (LUT)	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		0.675	Mar 2023	-		-		-	0.000	0.675	-
Bison - Production Qualification Testing	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		1.180	Sep 2023	-		-		-	0.000	1.180	-
CBRN - Production Verification Testing	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		-		0.800	Aug 2024	-		0.800	0.000	0.800	-
E2FDS - Production Qualification Test	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	0.318	Oct 2022	-		-		-		-	0.000	0.318	-
E2FDS - GVSC - Software Int Lab	MIPR	GVSC : Warren, MI	-	-		0.167	Jan 2023	-		-		-	0.000	0.167	-
		Subtotal	0.505	2.548		4.892		4.070		-		4.070	0.000	12.015	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.886	8.242		7.921		7.543		-		7.543	0.000	27.592	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
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*

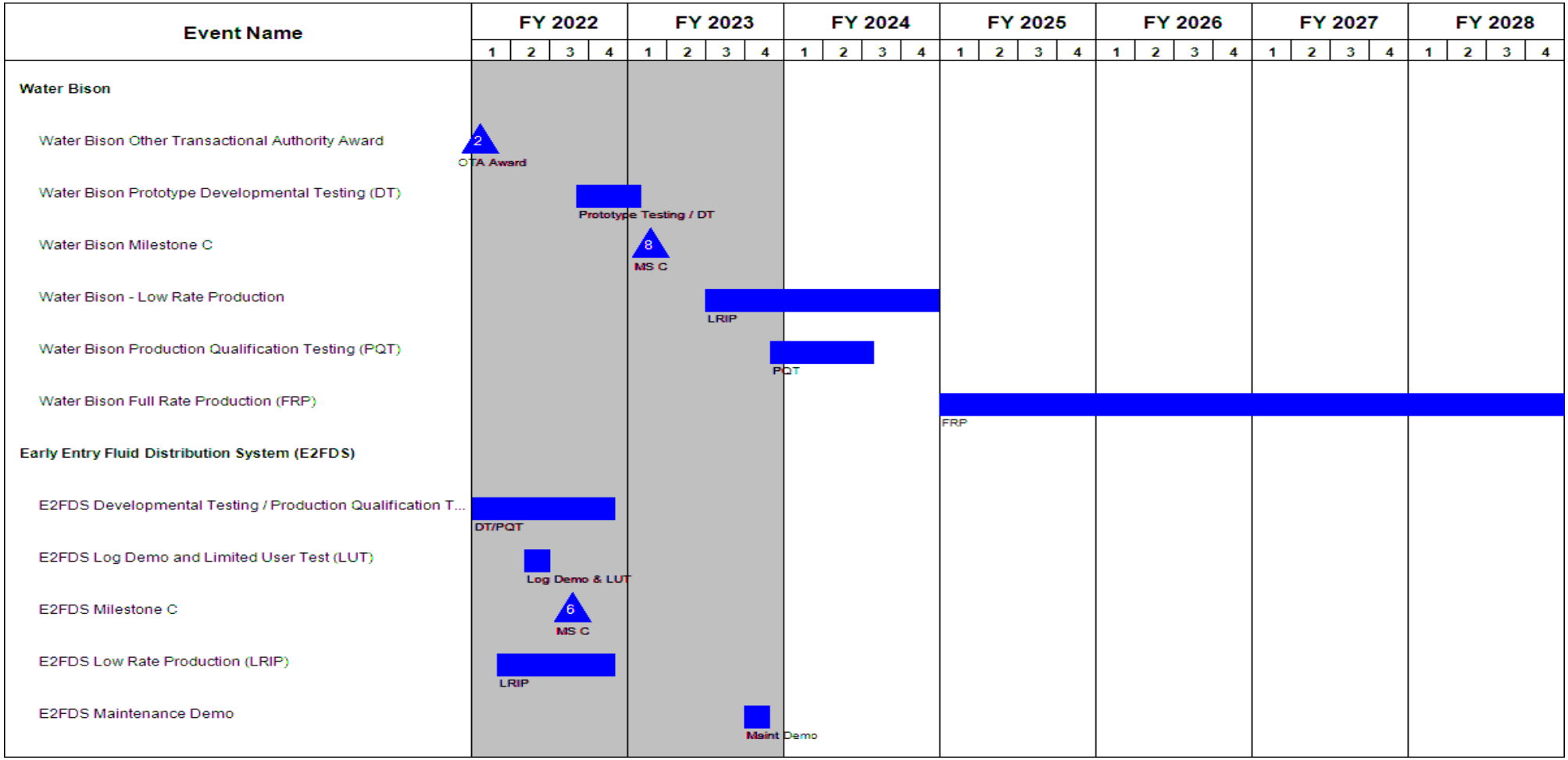

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

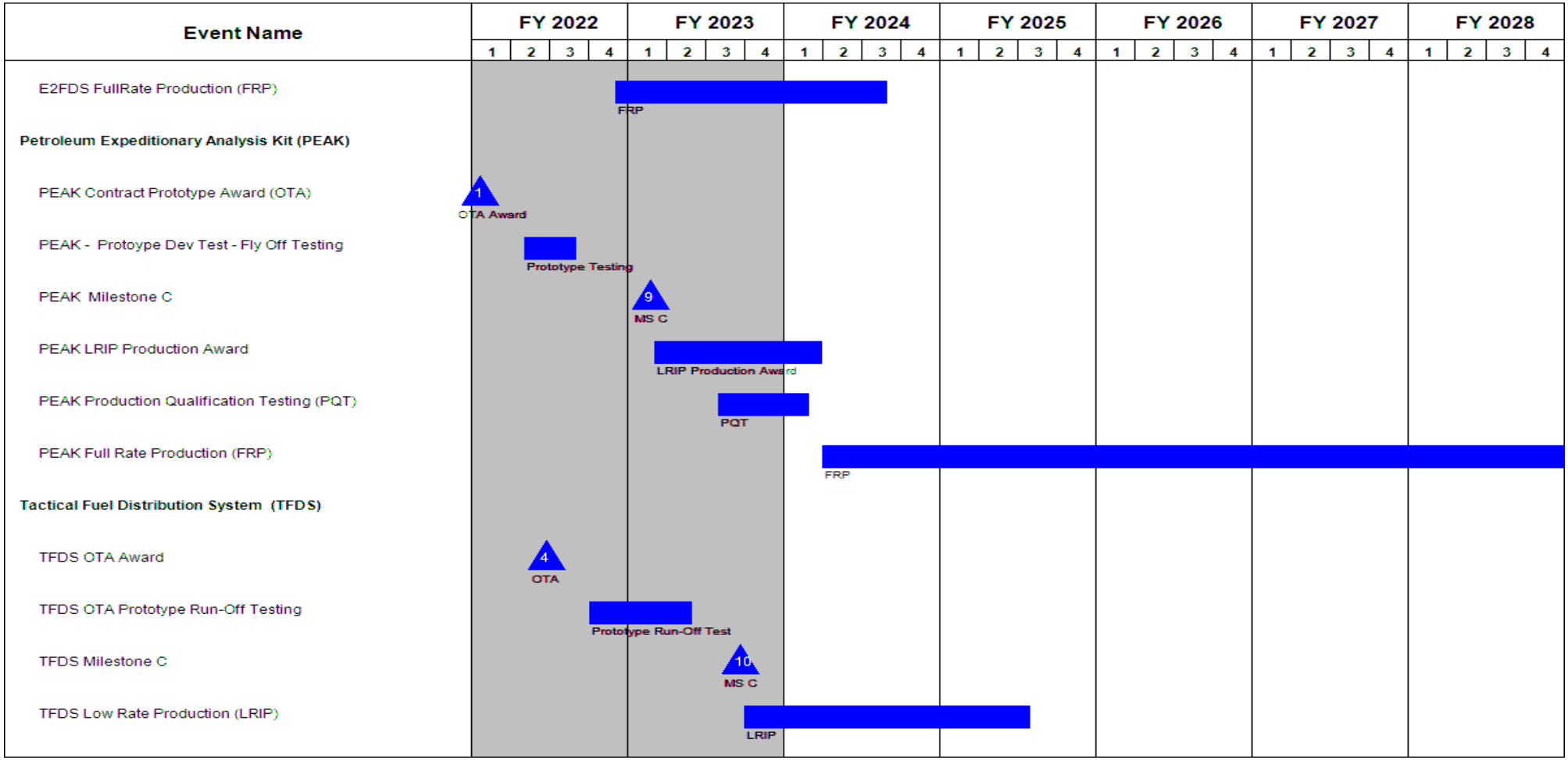

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

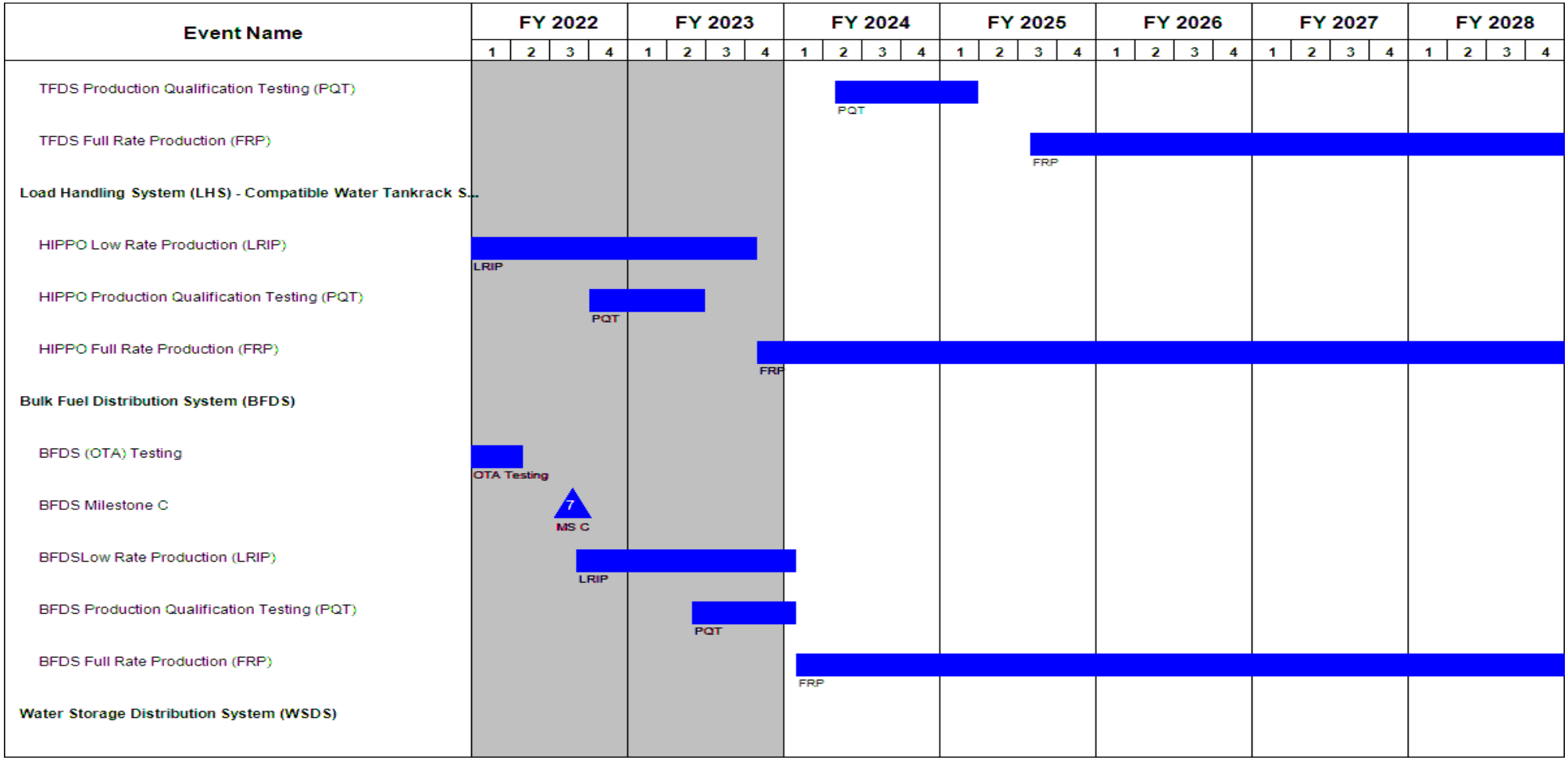

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

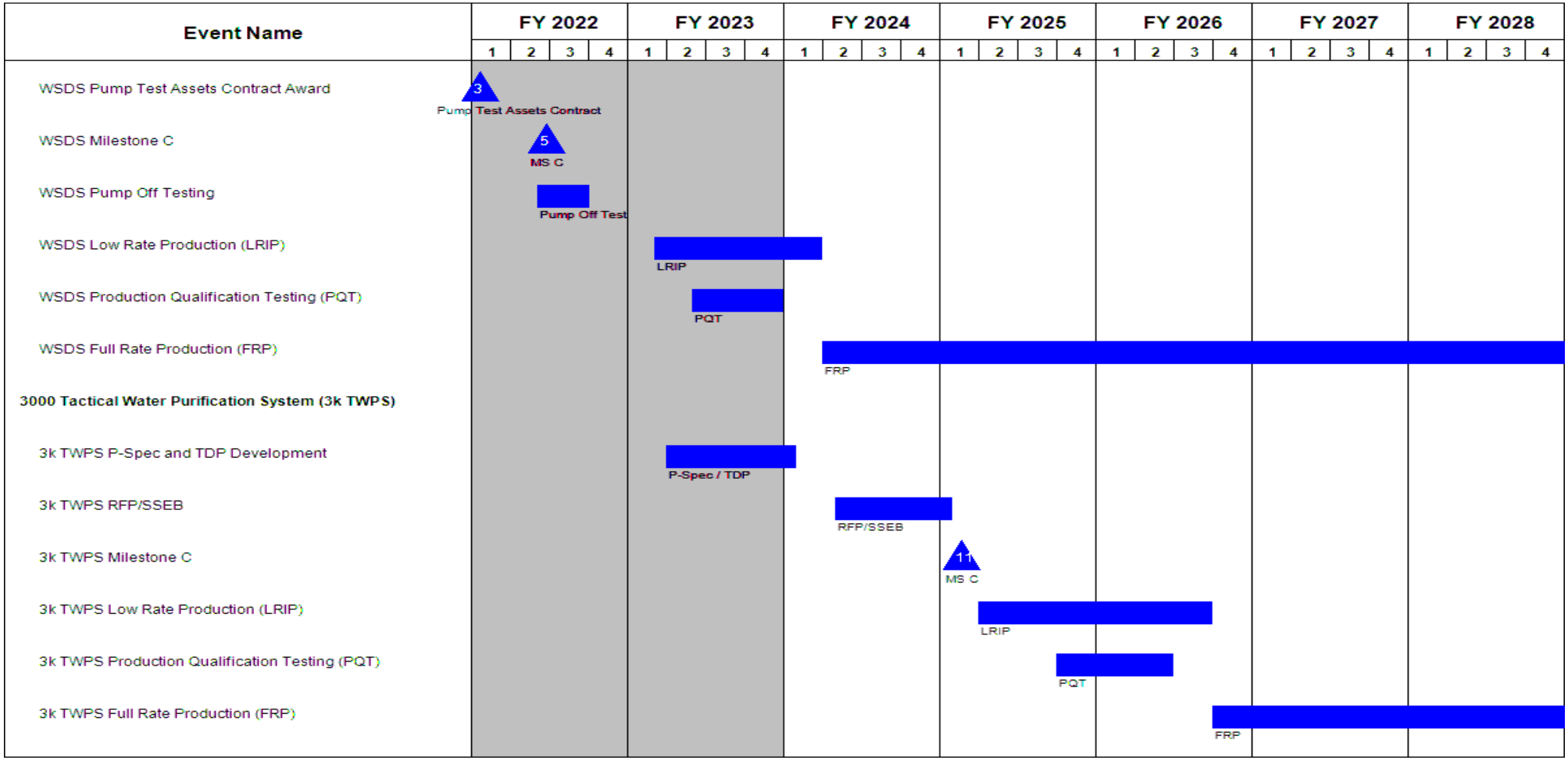

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

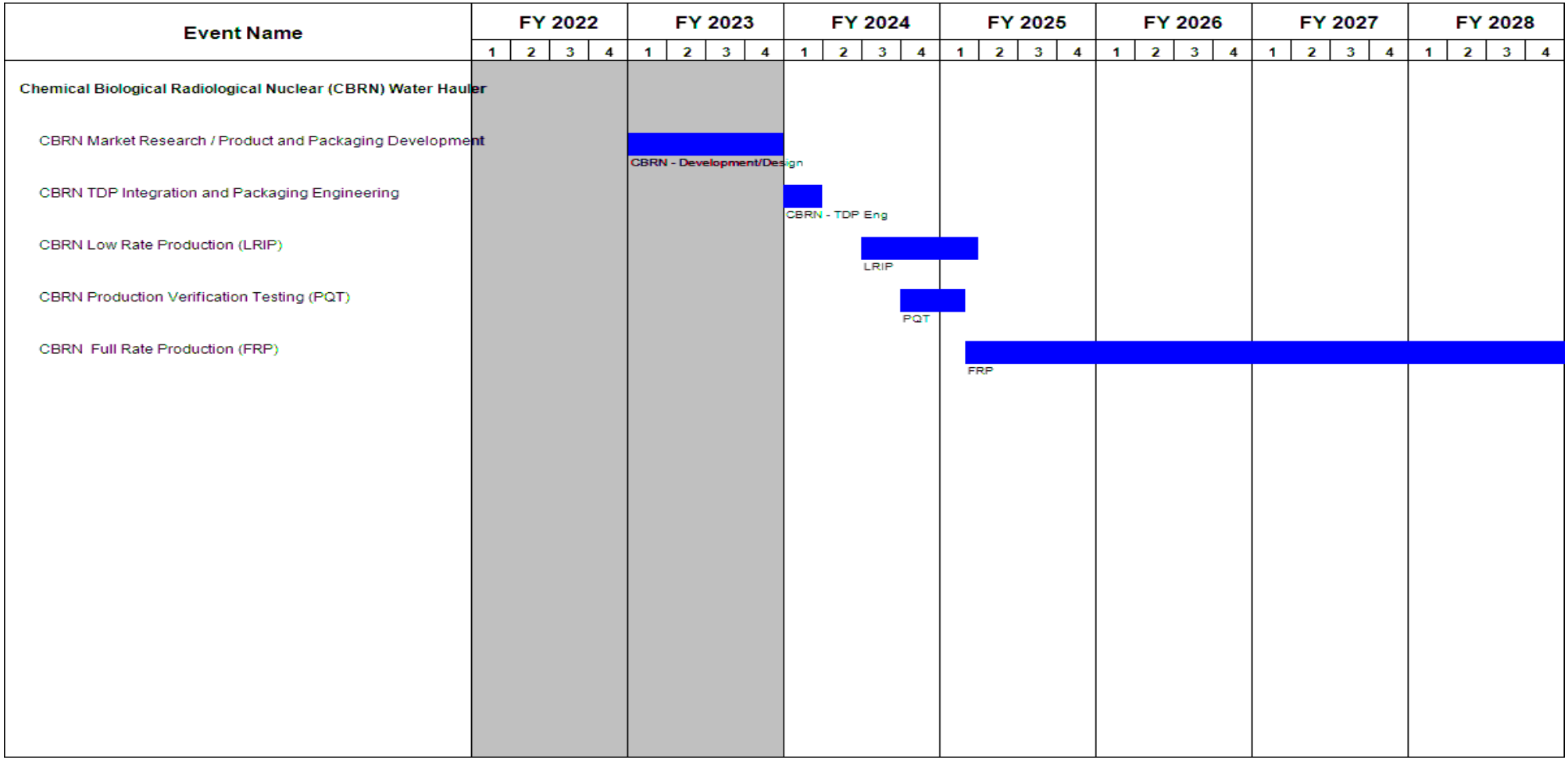

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

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	1	2023	1	2023
Water Bison - Low Rate Production	3	2023	4	2024
Water Bison Production Qualification Testing (PQT)	4	2023	3	2024
Water Bison Full Rate Production (FRP)	1	2025	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	3	2022
PEAK Milestone C	1	2023	1	2023
PEAK LRIP Production Award	1	2023	1	2024
PEAK Production Qualification Testing (PQT)	3	2023	1	2024
PEAK Full Rate Production (FRP)	2	2024	2	2029
Tactical Fuel Distribution System (TFDS)	1	2020	1	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
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	2	2023
TFDS Milestone C	3	2023	3	2023
TFDS Low Rate Production (LRIP)	4	2023	3	2025
TFDS Production Qualification Testing (PQT)	2	2024	1	2025
TFDS Full Rate Production (FRP)	3	2025	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	4	2023
HIPPO Production Qualification Testing (PQT)	4	2022	2	2023
HIPPO Full Rate Production (FRP)	4	2023	4	2031
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	2023	1	2024
WSDS Production Qualification Testing (PQT)	2	2023	4	2023
WSDS Full Rate Production (FRP)	2	2024	3	2032

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
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 TDP Integration and Packaging Engineering	1	2024	1	2024
CBRN Low Rate Production (LRIP)	3	2024	1	2025
CBRN Production Verification Testing (PQT)	4	2024	1	2025
CBRN Full Rate Production (FRP)	1	2025	2	2031

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
L46: *Maintenance Support Equipment*	-	0.738	0.972	1.306	-	1.306	-	-	-	-	0.000	3.016
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), 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 2024 Army		Date: March 2023
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*

FY 2024 Base funding in the amount of $1.306 million supports market research and limited user experiments for MWMSS Additive Manufacturing capabilities and development, prototyping, and test for the FRS program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024
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 2023 to FY 2024 Increase/Decrease Statement:*** Increase in number of MWMSS AM manufacturing capabilities under consideration in FY 2024.	0.200	-	0.431
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC §638 ***FY 2023 Plans:*** Funding transferred in accordance with Title 15 USC §638 ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC §638	-	0.036	-
Title: Forward Repair System and Standard Automotive Tool Set ***FY 2023 Plans:*** Funds development, TDP updates, test build, test activities, and logistics updates in support of the FRS and SATS. ***FY 2024 Plans:*** Funds development, TDP updates, test build, test activities, and logistics updates in support of the FRS and SATS. ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Initial efforts for FRS and SATS will commence in FY 2023. FY 2024 will be used to support developmental activities.	0.538	0.936	0.875
Accomplishments/Planned Programs Subtotals	0.738	0.972	1.306

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• G05301: *Mobile Maintenance Equipment Systems*	135.934	123.936	17.287	-	17.287	13.831	14.932	15.531	18.536	0.000	339.987

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost

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 2024 Army			Date: March 2023
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*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	PM SKOT : Warren, MI	0.372	0.200	Jan 2023	-		-		-		-	Continuing	Continuing	-
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.036		-		-		-	0.000	0.036	-
		Subtotal	0.372	0.200		0.036		-		-		-	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Additive Manufacturing Hardware	Various	TBD : TBD	1.098	-		-		0.331	Jan 2024	-		0.331	0.000	1.429	-
Forward Repair System Development / Prototype	MIPR	CCDC : Rock Island, IL	-	0.538		0.936		0.625	May 2024	-		0.625	0.000	2.099	-
		Subtotal	1.098	0.538		0.936		0.956		-		0.956	0.000	3.528	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Additive Manufacturing Support	MIPR	ECBC : IL	0.467	-		-		-		-		-	Continuing	Continuing	-
		Subtotal	0.467	-		-		-		-		-	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Additive Manufacturing Testing	MIPR	ATEC : Aberdeen Test Center	-	-		-		0.100	May 2024	-		0.100	0.000	0.100	-
Forward Repair System Testing	MIPR	ATEC : Aberdeen Test Center	-	-		-		0.250	May 2024	-		0.250	0.000	0.250	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
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*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		0.350		-		0.350	0.000	0.350	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.937	0.738		0.972		1.306		-		1.306	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
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*

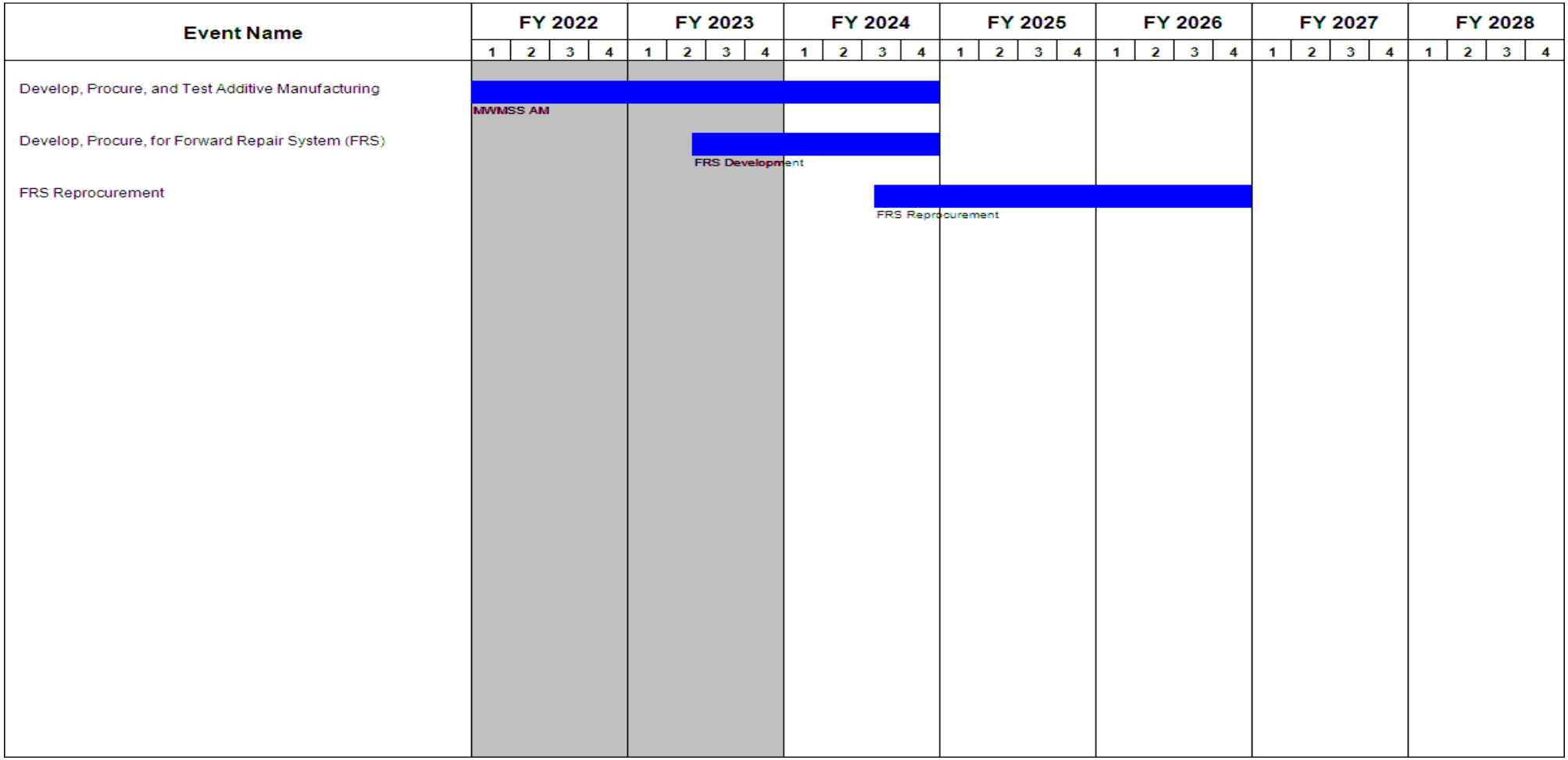

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L46 / *Maintenance Support Equipment*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Develop, Procure, and Test Additive Manufacturing	3	2016	4	2024
Develop, Procure, for Forward Repair System (FRS)	2	2023	4	2024
FRS Reprocurement	3	2024	4	2026

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
L47: *Improved Environmental Control Units Ed*	-	1.735	1.529	1.102	-	1.102	1.207	1.207	1.220	1.233	0.000	9.233
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 2022	FY 2023	FY 2024
Title: Technology Development	0.800	0.454	0.267
Description: Development and integration of Improved Environmental Control Units (IECU) in the range of 9-60K BTUH to support integrated shelter and command post systems.			
FY 2023 Plans: Identify and evaluate a near term drop in replacement refrigerant (454B) to provide a lower Global Warming Potential (GWP) alternative for existing and new production 9K, 18K, 36K, and 60Ks as well as test 9K remediation developed in FY22 including near term refrigerant.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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 2022	FY 2023	FY 2024
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 2023 to FY 2024 Increase/Decrease Statement:*** FY23 to FY24 decrease as remediation test will be complete.			
Title: Government System Test and Evaluation ***Description:*** Testing of IECU performance for multiple variants for stand-alone and soft wall shelter IECUs. ***FY 2023 Plans:*** Conduct testing to verify performance and reliability of 9/18/36/60K IECUs with interim drop in replacement refrigerant (454B) chemical to provide a lower Global Warming Potential alternative for existing and new production 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 2023 to FY 2024 Increase/Decrease Statement:*** FY23 to FY24 decrease as refrigerant testing is completed.	0.500	0.544	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 2023 Plans:*** Provide refrigeration technical expertise in support of alternative near term refrigerant development efforts and integration and/or adaptations for IECU user programs across the Army. ***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 2023 to FY 2024 Increase/Decrease Statement:*** FY23 to FY24 increase continues refrigeration technical expertise efforts.	0.301	0.125	0.130
Title: Government Program Management	0.134	0.350	0.600

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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 2022	FY 2023	FY 2024
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 2023 Plans:*** 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. ***FY 2024 Plans:*** 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 2023 to FY 2024 Increase/Decrease Statement:*** FY23 to FY24 increase for planning and preparation for contract efforts on objective refrigerant solutions.			
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC §638 ***FY 2023 Plans:*** Funding transferred in accordance with Title 15 USC §638 ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC §638	-	0.056	-
Accomplishments/Planned Programs Subtotals	1.735	1.529	1.102

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• MF9303: *IMPROVED ENVIRONMENTAL CONTROL UNITS*	6.116	7.672	7.617	-	7.617	7.413	7.425	7.430	7.385	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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*

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 2024 Army			Date: March 2023
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 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
9,18,36,60K Improved Environmental Control Unit (IECU)	Various	PM E2S2 : various	1.578	0.067	May 2022	0.350	Oct 2022	0.600	Dec 2023	-		0.600	0.000	2.595	Continuing
60K IECU	Various	PM E2S2 : various	0.673	0.067	May 2022	-		-		-		-	0.000	0.740	-
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.056	Feb 2023	-		-		-	0.000	0.056	-
		Subtotal	2.251	0.134		0.406		0.600		-		0.600	0.000	3.391	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
9,18,36,60K Improved Environmental Control Unit (IECU)	MIPR	NSSC : Natick, MA	3.333	0.800	Jun 2022	0.454	Jun 2023	0.267	Mar 2024	-		0.267	0.000	4.854	Continuing
		Subtotal	3.333	0.800		0.454		0.267		-		0.267	0.000	4.854	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 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	3.729	0.301	Jun 2022	0.125	Mar 2023	0.130	Dec 2023	-		0.130	0.000	4.285	-
		Subtotal	3.729	0.301		0.125		0.130		-		0.130	0.000	4.285	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army			Date: March 2023
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*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
9,18,36,60K Improved Environmental Control Unit (IECU)	MIPR	ETL : Dallas, TX	0.528	0.500	May 2022	0.544	Apr 2023	0.105	Feb 2024	-		0.105	0.000	1.677	-
		Subtotal	0.528	0.500		0.544		0.105		-		0.105	0.000	1.677	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.841	1.735		1.529		1.102		-		1.102	0.000	14.207	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
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*

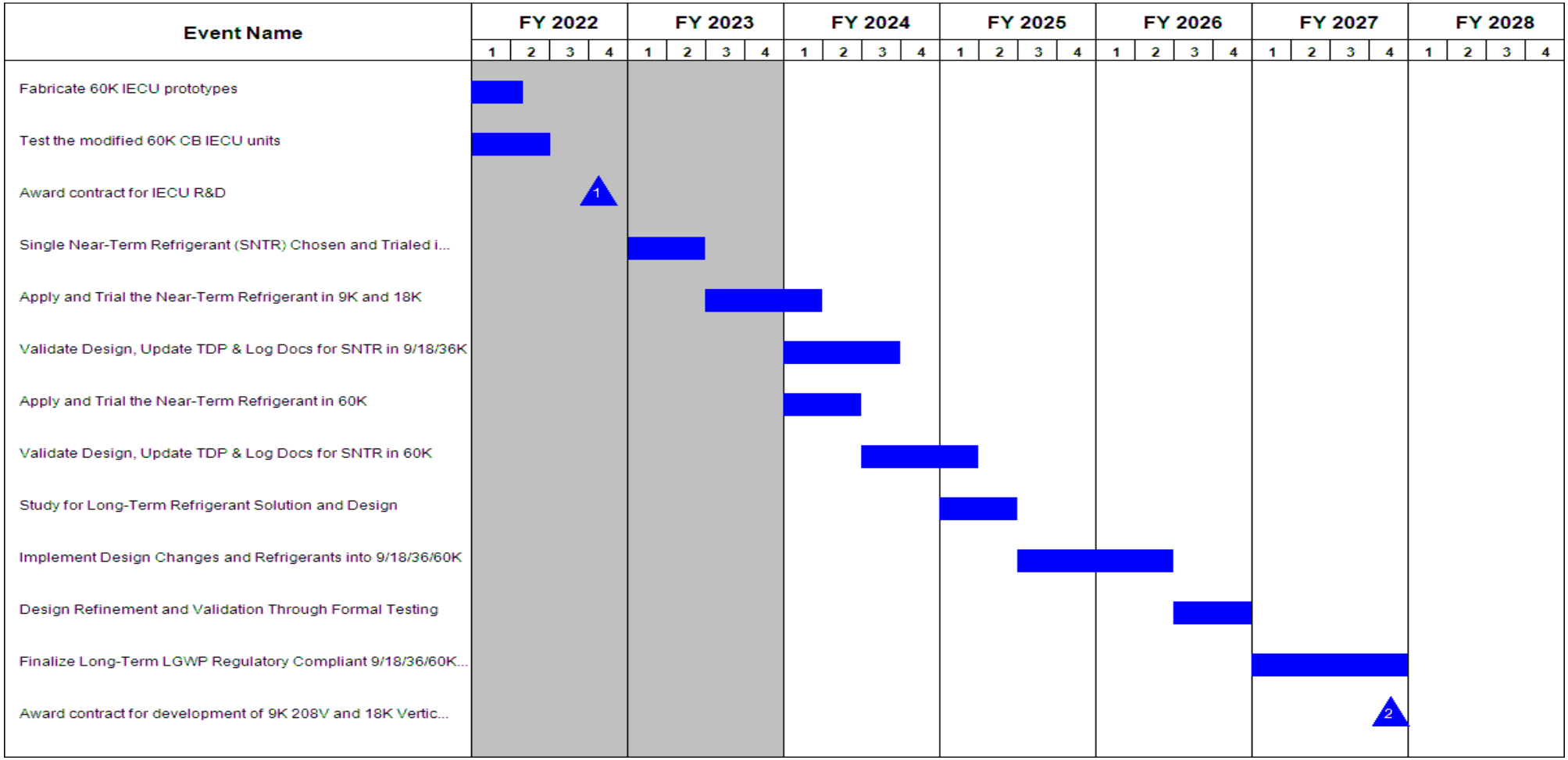

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L47 / *Improved Environmental Control Units Ed*

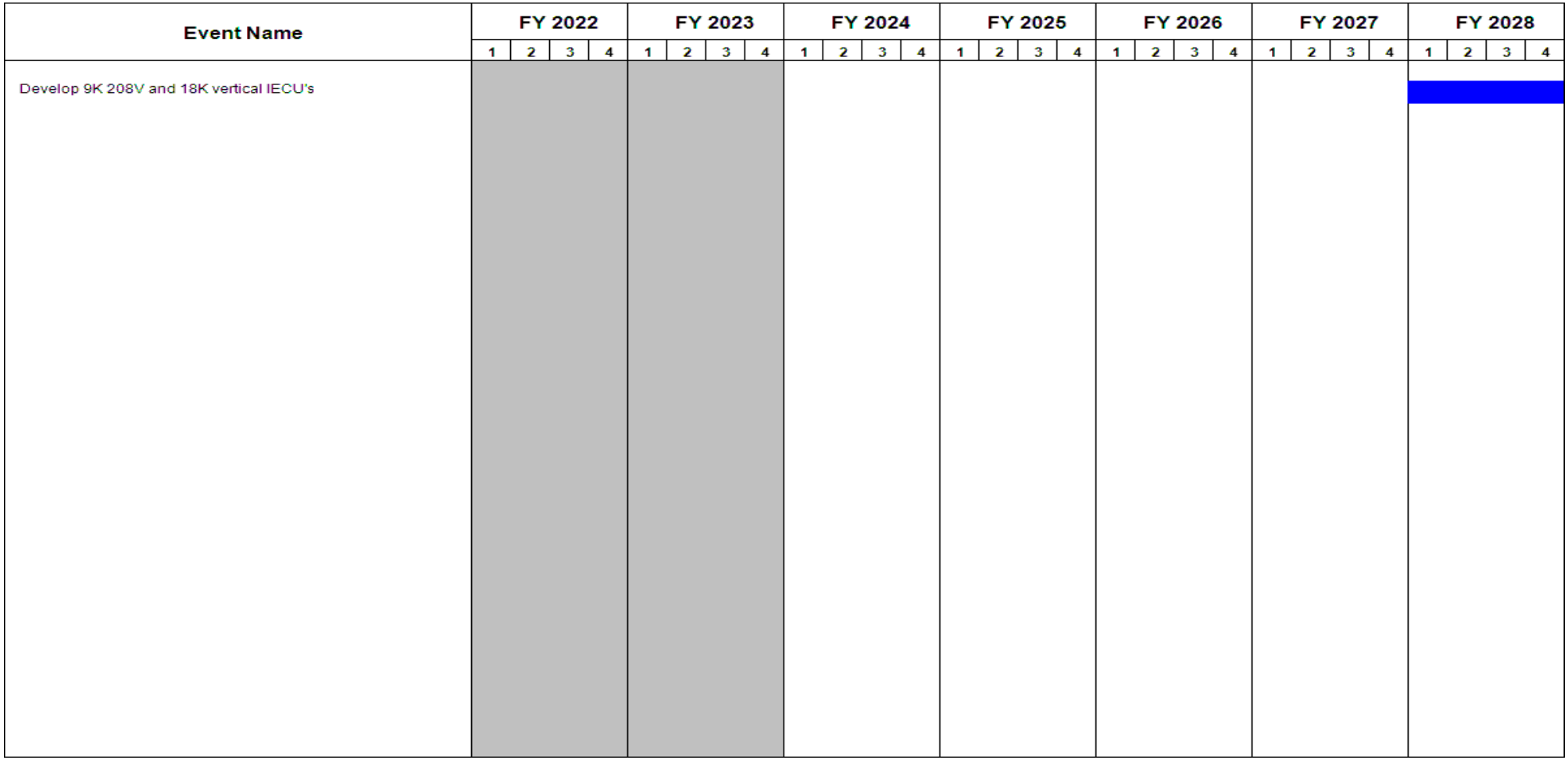

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L47 / *Improved Environmental Control Units Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Fabricate 60K IECU prototypes	1	2022	1	2022
Test the modified 60K CB IECU units	1	2022	2	2022
Award contract for IECU R&D	4	2022	4	2022
Single Near-Term Refrigerant (SNTR) Chosen and Trialed in 36K	1	2023	2	2023
Apply and Trial the Near-Term Refrigerant in 9K and 18K	3	2023	1	2024
Validate Design, Update TDP & Log Docs for SNTR in 9/18/36K	1	2024	3	2024
Apply and Trial the Near-Term Refrigerant in 60K	1	2024	2	2024
Validate Design, Update TDP & Log Docs for SNTR in 60K	3	2024	1	2025
Study for Long-Term Refrigerant Solution and Design	1	2025	2	2025
Implement Design Changes and Refrigerants into 9/18/36/60K	3	2025	2	2026
Design Refinement and Validation Through Formal Testing	3	2026	4	2026
Finalize Long-Term LGWP Regulatory Compliant 9/18/36/60K Design	1	2027	4	2027
Award contract for development of 9K 208V and 18K Vertical IECUs	4	2027	4	2027
Develop 9K 208V and 18K vertical IECU's	1	2028	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
VR7: *Combat Service Support Systems*	-	1.368	15.376	2.012	-	2.012	2.314	1.208	1.221	1.234	0.000	24.733
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 2022	FY 2023	FY 2024
Title: Army Standard Family of Rigid Wall Shelters (ASF-RWS)	1.368	3.253	2.012
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 2023 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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 2022	FY 2023	FY 2024
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 P1 (Expandable/Non-expandable ISO Variant). Conduct market strategy, develop performance specification, build performance specification based RFP with production options for ASF-RWS P2 (Vehicle Mounted Variant). ***FY 2024 Plans:*** 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 2023 to FY 2024 Increase/Decrease Statement:*** Funds decrease due to completion of ASF-RWS P1 development			
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC §638 ***FY 2023 Plans:*** Funding transferred in accordance with Title 15 USC §638 ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC §638	-	0.123	-
Accomplishments/Planned Programs Subtotals	1.368	3.376	2.012

	FY 2022	FY 2023
Congressional Add: ASF-RWS P1 and P3 MINATORS	-	12.000
FY 2023 Plans: ASF-RWS P1 prototypes will be procured to advance testing schedule and support to Modular, Insulated, Next-generation, All-weather, TSCIF-capable, Off-grid, Rapidly buildable Structure (MINATORS), a technical maturation effort to include prototypes for Operational Assessment (OA) in support of future P3 efforts		
Congressional Adds Subtotals	-	12.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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*

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 2024 Army			Date: March 2023
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 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management Support	Various	PM Force Sustainment Systems : Natick, MA	2.609	0.225	Dec 2022	3.075	May 2024	1.009	Dec 2023	-		1.009	0.000	6.918	-
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.123	Feb 2023	-		-		-	0.000	0.123	-
		Subtotal	2.609	0.225		3.198		1.009		-		1.009	0.000	7.041	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Army Standard Family of Rigid Wall Shelters (ASF-RWS)	Various	Various : Various	2.000	1.143	Sep 2022	10.452	Aug 2023	0.803	Dec 2023	-		0.803	0.000	14.398	-
		Subtotal	2.000	1.143		10.452		0.803		-		0.803	0.000	14.398	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 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	-		1.726	Feb 2024	0.200	Dec 2023	-		0.200	0.000	2.508	-
		Subtotal	0.582	-		1.726		0.200		-		0.200	0.000	2.508	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.191	1.368		15.376		2.012		-		2.012	0.000	23.947	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
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*

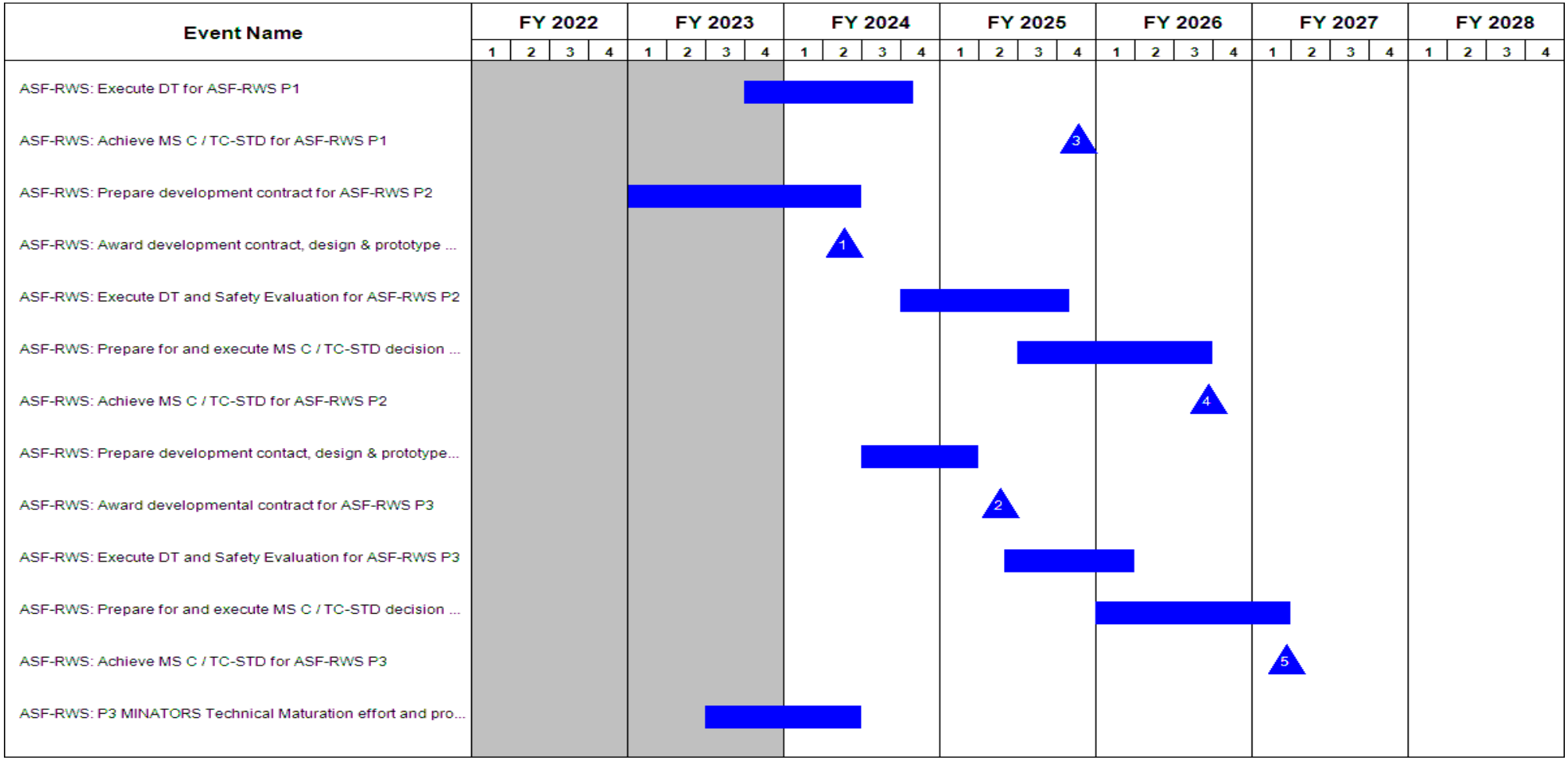

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** VR7 / *Combat Service Support Systems*

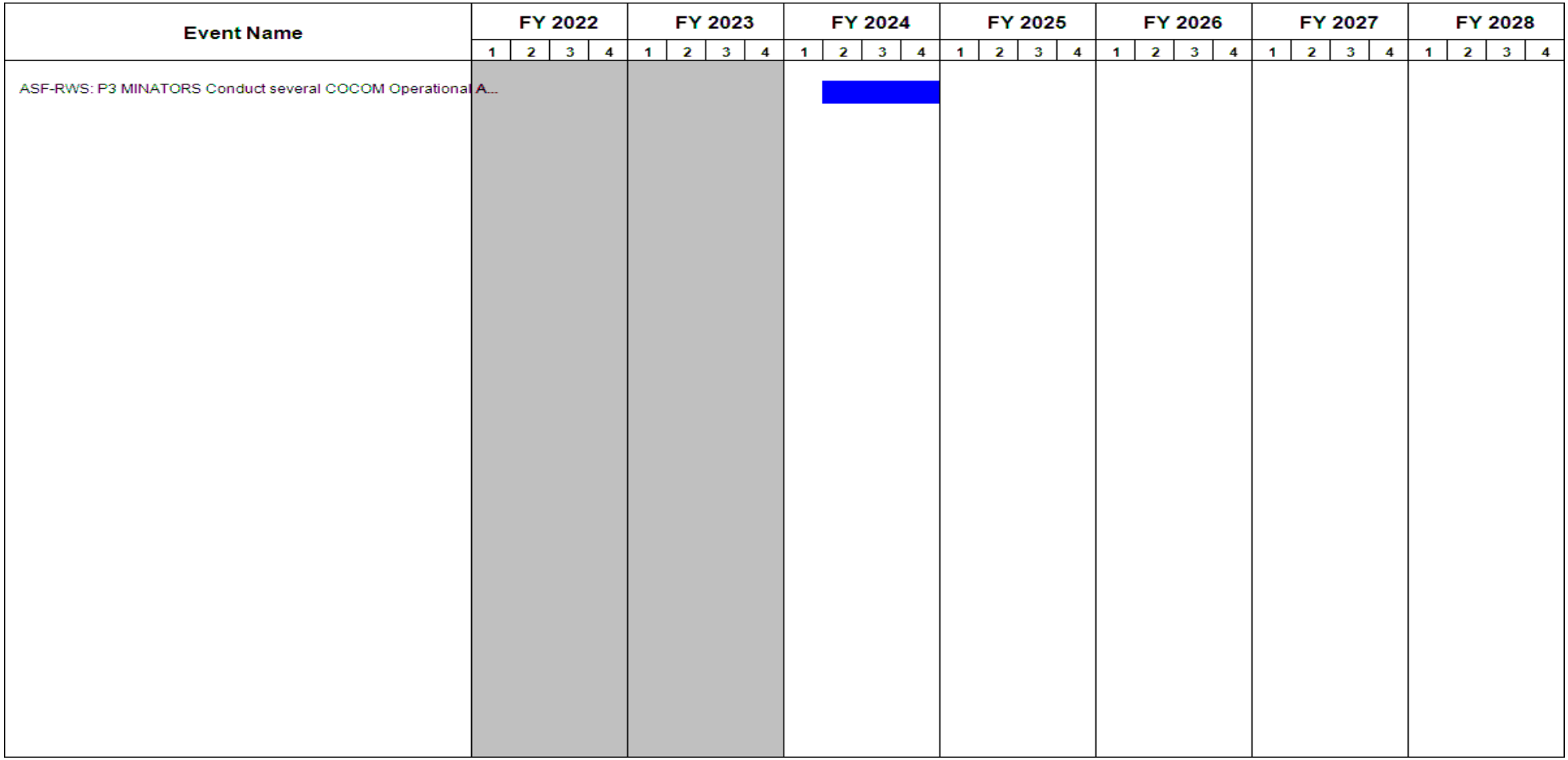

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** VR7 / *Combat Service Support Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ASF-RWS: Execute DT for ASF-RWS P1	4	2023	4	2024
ASF-RWS: Achieve MS C / TC-STD for ASF-RWS P1	4	2025	4	2025
ASF-RWS: Prepare development contract for ASF-RWS P2	1	2023	2	2024
ASF-RWS: Award development contract, design & prototype for ASF-RWS P2	2	2024	2	2024
ASF-RWS: Execute DT and Safety Evaluation for ASF-RWS P2	4	2024	4	2025
ASF-RWS: Prepare for and execute MS C / TC-STD decision for ASF-RWS P2	3	2025	3	2026
ASF-RWS: Achieve MS C / TC-STD for ASF-RWS P2	3	2026	3	2026
ASF-RWS: Prepare development contact, design & prototype for ASF-RWS P3	3	2024	1	2025
ASF-RWS: Award developmental contract for ASF-RWS P3	2	2025	2	2025
ASF-RWS: Execute DT and Safety Evaluation for ASF-RWS P3	2	2025	1	2026
ASF-RWS: Prepare for and execute MS C / TC-STD decision for ASF-RWS P3	1	2026	1	2027
ASF-RWS: Achieve MS C / TC-STD for ASF-RWS P3	1	2027	1	2027
ASF-RWS: P3 MINATORS Technical Maturation effort and produce prorotypes	3	2023	2	2024
ASF-RWS: P3 MINATORS Conduct several COCOM Operational Assessments	2	2024	4	2024