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

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev
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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	0.000	118.296	63.131	102.201	0.000	102.201	65.249	0.000	0.000	0.000	0.000	348.877
EV8: Mobile Protected Firepower	-	118.296	63.131	102.201	-	102.201	65.249	-	-	-	0.000	348.877

A. Mission Description and Budget Item Justification

Infantry Brigades lack the mobile, protected firepower capability necessary to defeat enemy prepared positions, destroy enemy armored vehicles, close with the enemy through fire and maneuver, and ensure freedom of maneuver and action in close contact with the enemy. Mobile Protected Firepower (MPF) will provide the protected, long range, precision direct-fire capability to ensure freedom of movement during offensive operations and defeat attacking enemy during defensive operations.

The Armored Systems Modernization - Engineering Development program element is directly aligned with the Next Generation Combat Vehicle (NGCV) Army Modernization Priority.

B. Program Change Summary (\$ in Millions)

	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	122.778	71.287	85.591	-	85.591
Current President's Budget	118.296	63.131	102.201	-	102.201
Total Adjustments	-4.482	-8.156	16.610	-	16.610
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-8.144			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-4.482	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	16.610	-	16.610
• FFRDC Transfer	-	-0.012	-	-	-

Change Summary Explanation

Adjustment to the FY 2024 budget year resources requirements to continue increased development of Mobile Protected Firepower training aids and devices.

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Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev				Project (Number/Name) EV8 / Mobile Protected Firepower			
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
EV8: Mobile Protected Firepower	-	118.296	63.131	102.201	-	102.201	65.249	-	-	-	0.000	348.877
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Infantry Brigades lack the mobile, protected firepower capability necessary to defeat enemy prepared positions, destroy enemy armored vehicles, close with the enemy through fire and maneuver, and ensure freedom of maneuver and action in close contact with the enemy. Mobile Protected Firepower (MPF) will provide the protected, long range, precision direct-fire capability to ensure freedom of movement during offensive operations and defeat attacking enemy during defensive operations.

This program is directly aligned with the Next Generation Combat Vehicle (NGCV) Army Modernization Priority.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2022	FY 2023	FY 2024
Title: Product Development - LRIP Phase Logistics Products	20.367	11.330	11.104
<p>Description: MPF Low Rate Initial Production (LRIP) phase development activities for logistics products include Technical Manual (TM) and Training Support Package (TSP) updates, verification and demonstration of supportability tasks, evaluation of incidents during performance testing for supportability impacts, continued development of National/Depot Maintenance Work Requirements (NMWR/DMWR), continued execution of Level of Repair Analyses (LORA) and Source of Repair Analyses (SORA), the provisioning of spare parts, supportability analysis of operator and maintenance tasks, and management of the Integrated Logistics Support (ILS) program.</p> <p>FY 2023 Plans: FY 2023 efforts will continue logistics products development, to include Operator, Field Maintenance, and Battle Damage and Repair (BDAR) Manuals, initiation of Logistics Demonstration (Log Demo) planning, additive manufacturing concept exploration, predictive logistics integration, development of an interactive technical manual capability, continued LORA and Reliability & Maintainability (R&M) analyses, completion of spare parts provisioning and SORA, development of NMWRs/DMWRs, and continued creation of training products for operators, field level maintainers, and instructors.</p> <p>FY 2024 Plans: FY 2024 activities include execution of the Logistics Demonstration (Log Demo) to evaluate the adequacy of the product support package, continued LORA to determine whether vehicle parts will be replaced, repaired, or discarded should they malfunction, and NMWR/DMWR development to enable depot level sustainment of the vehicle and subsystems once MPF vehicles are fielded. Additionally, Full Material Release procedures and verification of Operator, Field Maintenance, BDAR manual development will be initiated, and New Equipment Training in support of the Initial Operational Test & Evaluation (IOT&E) will be conducted.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Decrease is due to completion of the SORA and provisioning efforts.				
<p>Title: Product Development - LRIP Phase Contractor Technical Support to Government Test</p> <p>Description: MPF Low Rate Initial Production (LRIP) phase development activities for Contractor Technical Support to Test include purchase of the spare parts for LRIP phase testing, root cause analysis and the development of corrective actions on test incidents, training of vehicle operators at U.S. Government test sites, initiation of vehicle lethality, survivability, and weight reduction integration efforts, and integration of system design changes informed by user feedback. Efforts also include Systems Technical Support (STS) in the form of test configuration updates to MPF vehicle subsystems and field service representatives at U.S. Government test sites to perform MPF vehicle maintenance.</p> <p>FY 2023 Plans: FY 2023 activities include contractor technical support and systems technical support to Toxic Fumes testing, Corrosion testing, Government System Level (SL) Live Fire testing, and Automatic Fire Extinguisher System (AFES) testing. Additionally, the procurement of long lead-time spare parts (engines, transmissions, gunner's sights) to support FY 2024 Production Qualification Testing (PQT) and the FY 2024 Initial Operational Test & Evaluation (IOT&E) will also occur.</p> <p>FY 2024 Plans: FY 2024 activities include contractor technical support and systems technical support to PQT, Full Up System Level (FUSL) Live Fire Testing, and Corrosion testing, initiation of support to Initial Operational Test & Evaluation (IOT&E), IOT&E material management, IOT&E technical support, and continued root cause and corrective action analysis of test incidents. Activities also include initiation of survivability, lethality, mobility, and weight reduction integration efforts, battlefield and target awareness improvements, vehicle subsystem updates leveraging commonality with existing Army systems, and integration of system design changes informed by user feedback.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to additional test spare parts procurement, ammunition procurement, and field service representative support.</p>		15.004	7.868	18.396
<p>Title: Prototype Upgrade to LRIP Configuration</p> <p>Description: After a successful Milestone C, eight (8) prototype vehicles will be updated to the initial LRIP configuration to support LRIP phase survivability testing, logistics products development, and implementation of design changes driven by Production Qualification Testing (PQT) and Initial Operational Test and Evaluation (IOT&E). Upgrading MPF prototypes to LRIP configuration will result in substantial cost avoidance compared with producing additional LRIP vehicles to support test requirements.</p> <p>FY 2023 Plans:</p>		18.302	20.064	8.483

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>Material procurement and assembly labor to continue updating eight (8) MPF Prototypes to the initial LRIP configuration for use in survivability testing, logistics products development, and to aid implementation of design changes driven by PQT and IOT&E.</p> <p>FY 2024 Plans: Labor and material supporting final assembly, test, checkout, and acceptance of eight (8) MPF Prototypes upgraded to the initial LRIP configuration for use in survivability, performance, and reliability testing, logistics products development, and to aid implementation of design changes driven by PQT and IOT&E.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease is due to a reduction in material requirements as the prototype upgrades enter their final assembly, test, checkout, and acceptance.</p>				
<p>Title: LRIP Vehicles for Full-Up System-Level (FUSL) Live Fire</p> <p>Description: New production of three (3) MPF LRIP vehicles for use in FUSL Live Fire Testing (LFT).</p>		38.238	-	-
<p>Title: Government Test and Evaluation (Performance Testing)</p> <p>Description: During the Rapid Prototyping phase, the Government executed performance testing on sixteen (16) prototypes (eight per contractor) and four BH&T assets (two per contractor). FY 2021 and FY 2022 performance testing during the Rapid Prototyping phase included Ballistic Hull & Turret (BH&T) survivability testing and Pre-Production Testing (PPT), which consisted of vehicle-level lethality, Reliability, Availability, and Maintainability (RAM), and electromagnetic compatibility and interference testing. PPT also contained an initial cybersecurity evaluation.</p> <p>BH&T testing provided Force Protection and vehicle-level survivability data while PPT provided vehicle-level automotive, lethality, and RAM performance data. The results of Rapid Prototyping performance testing has informed the LRIP down select, which occurred on 24 June 2022.</p> <p>During the LRIP phase, the Government will execute performance testing on twelve (12) vehicles. Performance testing during the LRIP phase will include survivability testing and Production Quality Testing (PQT), which consists of vehicle-level lethality, RAM, electromagnetic compatibility and interference testing, environmental performance testing, and cybersecurity testing.</p> <p>FY 2023 Plans: In FY 2023, Prototypes, as well as Prototypes updated to LRIP configuration, will be utilized to conduct system performance testing, to include System Level (SL) Live Fire Testing (LFT), Automatic Fire Extinguisher System (AFES) testing, Controlled Damage Experiments (CDE), Special Armor testing, battery compartment ballistic testing, ammunition vulnerability testing, full-</p>		5.425	8.973	31.847

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>load cooling testing, toxic fumes testing, and the initiation of Corrosion testing. Additionally, Modeling and System (M&S) will be conducted to demonstrate the ballistic resiliency and crew survivability of a production-representative vehicle.</p> <p>FY 2024 Plans: Activities include execution of the PQT and Full Up System Level (FUSL) Live Fire testing to inform the FY 2025 Full Rate Production (FRP) decision. PQT evaluating system reliability, transportability, and automotive performance will be assessed at the Yuma Test Center (YTC), Aberdeen Test Center (ATC), and the Cold Regions Test Center (CRTC). PQT environmental performance testing will be assessed at YTC and CRTC. PQT system safety will be evaluated at White Sands Missile Range (WSMR), YTC, ATC, and CRTC. PQT electromagnetic environmental effects (E3) testing will occur at WSMR. Fire control, lethality, and cybersecurity PQT will occur at ATC. Corrosion testing will also be completed at ATC. PQT assessing Army Interoperability Certification requirements will occur at Fort Hood, Texas. The FUSL Live Fire test will be performed at ATC and will assess ballistic resiliency and platform survivability. Additionally, ballistic survivability models and simulations will be updated with results from MPF FUSL Live Fire testing.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to a broader and more extensive vehicle performance testing compared to FY 2023.</p>				
<p>Title: Government Test and Evaluation (Operational Testing)</p> <p>Description: During LRIP phase, the Government will execute a thirteen (13) vehicle Company-Level Initial Operational Test and Evaluation (IOT&E). The IOT&E is planned for FY 2024.</p> <p>FY 2024 Plans: Activities include site preparation, test planning, ATEC support to initiate execution of the MPF IOT&E, spare parts support to MPF, opposing force (OPFOR), tactical support, and other IOT&E participant vehicles, and test instrumentation of IOT&E participant vehicles. The IOT&E will evaluate the mission effectiveness, suitability, cybersecurity, and survivability of a unit equipped with MPF vehicles in an operational environment. The IOT&E will be conducted under realistic operational conditions using Army units executing decisive action operations in accordance with U.S. Army doctrine against a representative opposing force. Additionally, Soldier participants will undergo field maintenance and operator training in preparation for the IOT&E. The IOT&E will serve as a key data source for the Full Rate Production (FRP) decision.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to the initiation of IOT&E activities in FY 2024.</p>		-	-	10.814
<p>Title: Training Aids and Devices Development</p> <p>Description: Development of aids and devices to facilitate institutional training for MPF operators and maintainers. MPF training aids and devices will include Hands on Trainers (HOT), Diagnostic/Troubleshooting Trainers (DTT), Part Task Trainers (PTT),</p>		0.207	6.699	15.918

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>Crew Modular Unit Recorders (CMUR), an Advanced Gunnery Training System (AGTS), and an MPF Combat Vehicle Tactical Engagement Simulation System (CVTESS). MPF aids and devices will be interoperable/compatible with the Army's current live Tactical Engagement Simulation (TES) systems, instrumentation systems, Common Training Instrumentation Architecture (CTIA), Live, Virtual Constructive-Integrated Architecture (LVC-IA) training enablers, and the future Synthetic Training Environment (STE).</p> <p>FY 2023 Plans: Efforts include training device development contract awards enabling software development for gunnery and maintenance training devices and development of MPF physical data interfaces enabling integration of the CVTESS and CMUR. Also, requirements development of MPF gunnery, maintenance, and collective training devices in coordination with training device material developers and Soldier representatives will continue.</p> <p>FY 2024 Plans: FY 2024 activities include contract awards for HOT, DTT, and AGTS development. HOT development will initiate the design of an MPF production representative turret and subsystem structure to enable the maintenance training of the MPF turret and its subsystems. DTT development will enable computer-based simulations of MPF repair tasks in a classroom setting using a three-dimensional (3D) virtual environment. AGTS development will include the build of prototype gunnery training devices which will train Soldiers on Gate-to-Live-Fire (GTLF) qualification and on the Crew Training Program which are exercises designed to train crew coordination supporting the execution of precision gunnery tasks.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase in FY 2024 is due to additional development and prototype build activity for gunnery and maintenance training devices.</p>				
<p>Title: Product Development - Middle Tier Acquisition (MTA) Rapid Prototyping (RP) Phase</p> <p>Description: MPF MTA RP, to include integration engineering, prototype builds, technical support to government test, and logistics products development efforts contracted to BAE Systems and General Dynamics Land Systems (GDLS).</p>		7.640	-	-
<p>Title: Government Engineering and Project Management</p> <p>Description: Government program management and system engineering support, to include salaries, travel, training, supplies, facilities, equipment, and support contractors necessary to manage development efforts during the MPF MTA Rapid Prototyping and LRIP phases.</p> <p>FY 2023 Plans:</p>		9.764	5.893	5.639

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>Continue engineering, logistics, product assurance and test, financial management, and operations support for MPF LRIP development activities from November 2022 through October 2023. Includes salaries, training, travel, supplies, facilities, and equipment to manage MPF test and evaluation and logistics products and training device development efforts.</p> <p>FY 2024 Plans: Continue engineering, logistics, product assurance and test, financial management, and operations support for MPF LRIP development activities from November 2023 through October 2024. Includes salaries, training, travel, supplies, facilities, and equipment to manage MPF test and evaluation and logistics products development efforts.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease due to a minor reductions in travel, training, supplies, facilities, equipment, and support contractors necessary to manage development efforts during the MPF MTA Rapid Prototyping and LRIP phases from FY 2023 to FY 2024.</p> <p>Title: Government Support to Product Development</p> <p>Description: Government support to MPF MTA Rapid Prototyping efforts, to include LRIP contract Source Selection activities, and Large Caliber Weapon System development.</p>	3.349	-	-
<p>Title: SBIR/STTR</p> <p>Description: Requirements to support Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs.</p> <p>FY 2023 Plans: Requirements to support Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638.</p>	-	2.304	-
Accomplishments/Planned Programs Subtotals	118.296	63.131	102.201

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• G80820: Mobile Protected Firepower	286.977	354.708	394.635	-	394.635	558.656	569.125	590.208	620.822	Continuing	Continuing

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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks
Standard Serial Number (SSN) G80820 resources production of MPF. FY 2022 - FY 2024 resourcing supports MPF Low Rate Initial Production (LRIP). Resourcing in FY 2025 and beyond supports MPF Full Rate Production (FRP).

D. Acquisition Strategy

The MPF RFP was issued on 21 November 2017 as a full and open, best value competitive action. On 25 September 2018, the Army Acquisition Executive (AAE) approved the execution of MPF Rapid Prototyping activities under Section 804 of the 2016 National Defense Authorization Act (NDAA) (Public Law 114-92), Middle Tier Acquisition (Rapid Prototyping). The competitive selection process for MPF Rapid Prototyping contracts included the evaluation of written proposals and optional bid samples to provide additional substantiating data for Source Selection Evaluation. On 17 December 2018, two MPF Rapid Prototyping contracts were awarded, one to BAE Systems and the other to General Dynamics Land Systems (GDLS). On 24 June 2022 the MPF program obtained AAE Milestone C approval, and an LRIP phase contract was awarded to GDLS on 28 June 2022 for continued Logistics Products development, continued Contractor Technical Support to Test, and for the first production order of MPF vehicles. An MPF Full Rate Production (FRP) decision is targeted for 3rd Quarter, FY 2025.

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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 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower
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Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Engineering and Project Management	MIPR	Various : Warren, MI; Picatinny, NJ	60.095	9.764	Nov 2021	5.893	Nov 2022	5.639	Nov 2023	-		5.639	5.298	86.689	-
SBIR/STTR	Various	Various : Various	-	-		2.304	Jan 2023	-		-		-	0.000	2.304	-
Subtotal			60.095	9.764		8.197		5.639		-		5.639	5.298	88.993	N/A

Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Product Development - LRIP Phase - LRIP Logistics Products	C/FFP	General Dynamics Land Systems (GDLS) : Sterling Heights, MI	0.169	20.367	Jun 2022	11.330	Oct 2022	11.104	Oct 2023	-		11.104	3.459	46.429	46.429
Product Development - LRIP Phase - LRIP Contractor Technical Support to Government Test	C/FFP	General Dynamics Land Systems (GDLS) : Sterling Heights, MI	-	12.442	Jun 2022	4.981	Oct 2022	9.837	Oct 2023	-		9.837	34.126	61.386	71.472
System Technical Support to Government Testing	SS/CPFF	General Dynamics Land Systems (GDLS) : Sterling Heights, MI	-	2.562	Jun 2022	2.887	Oct 2022	8.559	Oct 2023	-		8.559	0.000	14.008	-
Prototype Upgrade to LRIP Configuration	C/FFP	General Dynamics Land Systems (GDLS) : Sterling Heights, MI	-	18.302	Jun 2022	20.064	Oct 2022	8.483	Oct 2023	-		8.483	0.129	46.978	46.966
LRIP Vehicles for Full-Up System-Level (FUSL) Live Fire	C/FPIF	TBD : TBD	-	38.238	Jun 2022	-		-		-		-	0.000	38.238	38.238
Product Development - Government Furnished Material (GFM) Procurement	Various	Various : Various	2.346	-		-		-		-		-	0.000	2.346	-

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Product Development - Middle Tier Acquisition (MTA) Rapid Prototyping Contracts	C/FFP	BAE Systems; General Dynamics Land Systems (GDLS) : Sterling Heights, MI; Sterling Heights, MI	697.556	7.640	Oct 2021	-		-		-		-	0.000	705.196	711.460
Subtotal			700.071	99.551		39.262		37.983		-		37.983	37.714	914.581	N/A

Remarks
 Product Development - Middle Tier Acquisition (MTA) Rapid Prototyping Contracts Remark: MTA Rapid Prototyping contract costs are inclusive of both competitors during the Mobile Protected Firepower (MPF) MTA Rapid Prototyping Phase (1st Quarter FY 2019 to 3rd Quarter FY 2022). The MPF program down-selected to General Dynamics Land Systems to continue for LRIP phase activities following Milestone C approval by the Army Acquisition Executive on 24 June 2022.

Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Support to Product Development - Large Caliber Weapon System Development	PO	Armament Research, Development and Engineering Center (ARDEC); Watervliet Arsenal (WVA); Rock Island Arsenal (RIA) : Picatinny, NJ; Watervliet, NY; Rock Island, IL	6.220	2.030	Nov 2021	-		-		-		-	0.000	8.250	-
Government Support to Product Development - Source Selection Evaluation Board (SSEB)	Various	Various : Various	4.992	1.319	Jan 2022	-		-		-		-	0.000	6.311	-
Training Aids and Devices Development	Various	Program Executive Office Simulation, Training and Instrumentation	0.224	0.207	Mar 2022	6.699	Nov 2022	15.918	Nov 2023	-		15.918	16.515	39.563	-

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2040 / 5				PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev				EV8 / Mobile Protected Firepower							
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		(PEO STRI) : Orlando, FL													
Subtotal			11.436	3.556		6.699		15.918		-		15.918	16.515	54.124	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Production Qualification Testing (PQT) at Aberdeen Test Center (ATC) & Army Interoperability Testing	PO	Aberdeen Test Center (ATC); Central Technical Support Facility (CTSF) : Aberdeen, MD; Fort Hood, TX	-	-		2.614	Jan 2023	8.424	Nov 2023	-		8.424	0.000	11.038	-
PQT at Yuma Test Center (YTC)	PO	Yuma Test Center (YTC) : Yuma, AZ	-	-		0.075	Jan 2023	5.666	Feb 2024	-		5.666	0.000	5.741	-
PQT at White Sand Missile Range (WSMR)	PO	White Sands Missile Range (WSMR) : White Sands Missile Range, NM	-	-		0.096	Jan 2023	1.928	Apr 2024	-		1.928	0.000	2.024	-
PQT at Cold Regions Test Center (CRTC)	PO	Cold Regions Test Center : Fort Greely, AK	-	-		0.100	Jan 2023	3.009	Sep 2024	-		3.009	0.000	3.109	-
Survivability, Lethality, and Full Up System Level (FUSL) Live Fire Testing	PO	Aberdeen Test Center (ATC) : Aberdeen, MD	-	-		5.887	Jan 2023	10.709	Dec 2023	-		10.709	0.770	17.366	-
Data Analysis and Evaluation Support	Various	Combat Capability Development Command - Data Analysis Center (CCDC-DAC), Army Evaluation Center (AEC), Combined Arms	-	-		0.201	Oct 2022	2.111	Nov 2023	-		2.111	0.225	2.537	-

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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 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower
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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		Support Command (CASCOM) : Various													
Initial Operational Test & Evaluation (IOT&E)	PO	Operational Test Center (OTC) : Fort Hood, TX	-	-		-		10.814	Jun 2024	-		10.814	4.727	15.541	-
Middle Tier Acquisition (MTA) Rapid Prototyping (RP) Phase Performance and Operational Testing	PO	Various: ATC, YTC, WSMR : Various	36.239	5.425		-		-		-		-	0.000	41.664	-
Subtotal			36.239	5.425		8.973		42.661		-		42.661	5.722	99.020	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		807.841	118.296	63.131	102.201	-	102.201	65.249	1,156.718	N/A

Remarks
 Prior Years funding supported award of Rapid Prototyping contracts to design and build 24 total Mobile Protected Firepower (MPF) prototypes (12 per vendor) and four Ballistic Hull & Turrets (two per vendor) and initiation of Pre-production Prove-out Testing (PPT).

 FY 2021 funding supported the continuation of PPT, completion of Limited User Testing (LUT), and further development of MPF Logistics Products (Technical Manuals, Training Support Package, Repair Parts and Special Tools List). FY 2022 funding completed MPF Rapid Prototyping, executed the Low Rate Initial Production (LRIP) source selection, and awarded LRIP phase contracts to continue logistics products development and procure long lead spares for Performance Qualification Test (PQT) and Initial Operational Test & Evaluation (IOT&E). FY 2023 funding continued MPF logistics products development, initiated PQT, performed Modeling and Simulation (M&S) to aid in demonstrating system ballistic resiliency and survivability, and initiated efforts enabling integration of the Combat Vehicle Tactical Engagement Simulation System (CVTESS) and Crew Modular Unit Recorder (CMUR) training devices into the MPF vehicle. FY 2024 funding will continue LRIP phase logistics products development and contractor technical support to testing. FY 2024 will also exhibit training device contract awards for the development of the Hands on Trainer (HOT), Diagnostic Troubleshooting Trainer (DTT) and Part Task Trainer (PTT), award of the prototype contract for the Advanced Gunnery Training System (AGTS), and the execution of PQT and IOT&E.

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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 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Milestone C (MS C)			1 MS C																									
Full Rate Production (FRP) Decision													5 FRP Decision															
Full Material Release (FMR)															7 FMR													
First Unit Equipped (FUE)															8 FUE													
Risk Reduction of Large Caliber Weapon System																												
Mobile Protected Firepower (MPF) Rapid Prototyping Phase																												
Prototype Deliveries (24 Prototypes)																												
Pre-Production Test (PPT)																												
Limited User Training (LUT)																												
Training Support Package (TSP) Development																												
Maintenance Task Analysis (MTA) and Level Of Repair Anal...																												
Technical Manual (TM) Development																												
TM Validation																												

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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 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TM Development Update					[Redacted]				[Redacted]																			
					TM Development Update																							
TM Verification													[Redacted]															
													TM Verification															
Level of Repair Analysis (LORA)									[Redacted]				[Redacted]															
									LORA																			
Source of Repair Analysis (SORA)									[Redacted]																			
									SORA																			
Training Support Package (TSP) Update									[Redacted]				[Redacted]															
									TSP Update																			
National/Depot Maintenance Work Instruction (NMWR/DMWR)/B...									[Redacted]				[Redacted]															
									NMWR/DMWR/BDAR Development																			
Spares Provisioning									[Redacted]																			
									Spares Provisioning																			
Logistics Demonstration (Log Demo)									[Redacted]																			
									Log Demo																			
Prototype Vehicle Updates to LRIP Configurations (Qty 8)					[Redacted]				[Redacted]																			
					Prototype Updates to LRIP Configuration																							
Corrosion Testing									[Redacted]																			
									Corrosion Testing																			
CDE/SL/AFES Testing					[Redacted]																							
					CDE/SL/AFES Testing																							
Supportability Assessment (SA)	[Redacted]																											
	Supportability Assessment (SA)																											
Training Devices Requirements Refinement Performance Spe...	[Redacted]				[Redacted]																							
	Train Devices Req and Perf Spec Development																											

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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 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Vehicle Data Interface Development for Training Devices																												
Common Software Library (CSL) Development for Training D...																												
Gunnery Training System (GTS) Prototype Build																												
Part Task Trainer (PTT) and Diagnostic Troubleshooting T...																												
Low Rate Initial Production (LRIP) Option #1 Award																												
LRIP Option #1 Deliveries																												
Production Qualification Testing (PQT) at Aberdeen Test ...																												
Production Qualification Testing (PQT) at Yuma Test Cent...																												
Production Qualification Testing (PQT) at White Sands Mi...																												
Production Qualification Testing (PQT) at Cold Regions T...																												
Full Up System Level (FUSL) Live Fire Testing at Aberdee...																												
Army Interoperability Testing																												
Initial Operational Test and Evaluation (IOT&E)																												

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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 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028											
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
LRIP Option #2 Award					3 ▲	LRIP Option #2 Award																														
LRIP Option #2 Deliveries																																				
LRIP Option #3 Award													4 ▲	LRIP Option #3 Award																						
LRIP Option #3 Deliveries																																				
FRP Lot #1 Award																	6 ▲	FRP Lot #1 Award																		
FRP Lot #1 Deliveries																																				
FRP Lot #2 Award																					9 ▲	FRP Lot #2 Award														
FRP Lot #2 Deliveries																																				
FRP Lot #3 Award																									10 ▲	FRP Lot #3 Award										
FRP Lot #3 Deliveries																																				
FRP Lot #4 Award																													11 ▲	FRP Lot #4 Award						

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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 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Section 804 MTA Rapid Prototyping Designation	4	2018	4	2018
Milestone C (MS C)	3	2022	3	2022
Full Rate Production (FRP) Decision	2	2025	2	2025
Full Material Release (FMR)	4	2025	4	2025
First Unit Equipped (FUE)	4	2025	4	2025
Request for Proposal (RFP) Release	1	2018	1	2018
Risk Reduction of Large Caliber Weapon System	3	2017	3	2022
Middle Tier Acquisition (MTA) Source Selection Evaluation Board (SSEB)	2	2018	1	2019
Rapid Prototyping Contract Awards	1	2019	1	2019
Mobile Protected Firepower (MPF) Rapid Prototyping Phase	1	2019	3	2022
Design Maturity Review (DMR)	3	2019	3	2019
Ballistic Hull & Turret (BH&T) Deliveries (4 BH&Ts)	1	2021	2	2021
BH&T Test Readiness Review (TRR)	1	2021	1	2021
BH&T Test	2	2021	4	2021
Prototype Deliveries (24 Prototypes)	3	2020	2	2022
Pre-Production Test (PPT)	4	2020	2	2022
Soldier Vehicle Assessment (SVA) Readiness Review (RR)	1	2021	1	2021
SVA	2	2021	4	2021
Limited User Training (LUT)	4	2021	1	2022
Training Support Package (TSP) Development	2	2019	3	2022
Maintenance Task Analysis (MTA) and Level Of Repair Analysis (LORA)	2	2019	3	2022
Technical Manual (TM) Development	2	2019	3	2022

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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 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower
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Events	Start		End	
	Quarter	Year	Quarter	Year
TM Validation	3	2021	3	2022
TM Development Update	1	2023	4	2024
TM Verification	2	2024	4	2024
Level of Repair Analysis (LORA)	3	2022	2	2025
Source of Repair Analysis (SORA)	3	2022	3	2023
Training Support Package (TSP) Update	3	2022	3	2025
Nationa/Depot Maintenance Work Instruction (NMWR/DMWR)/Battle Damage Assessment and Repair (BDAR) Development	3	2022	3	2025
Spares Provisioning	3	2022	4	2023
Logistics Demonstration (Log Demo)	1	2024	2	2024
Prototype Vehicle Updates to LRIP Configurations (Qty 8)	3	2022	2	2024
Corrosion Testing	2	2023	2	2024
CDE/SL/AFES Testing	4	2022	4	2023
Supportability Assessment (SA)	1	2022	1	2022
Training Devices Requirements Refinement Performance Spec Development	2	2019	4	2023
Vehicle Data Interface Development for Training Devices	2	2023	4	2023
Common Software Library (CSL) Development for Training Devices	2	2023	1	2024
Gunnery Training System (GTS) Prototype Build	2	2024	1	2026
Part Task Trainer (PTT) and Diagnostic Troubleshooting Trainer (DTT) Prototype Build	1	2024	4	2025
Low Rate Initial Production (LRIP) Option #1 Award	3	2022	3	2022
LRIP Option #1 Deliveries	1	2024	1	2025
Production Qualification Testing (PQT) at Aberdeen Test Center (ATC)	1	2024	1	2025
Production Qualification Testing (PQT) at Yuma Test Center (YTC)	2	2024	1	2025
Production Qualification Testing (PQT) at White Sands Missile Range (WSMR)	3	2024	4	2024
Production Qualification Testing (PQT) at Cold Regions Test Center (CRTC)	4	2024	2	2025
Full Up System Level (FUSL) Live Fire Testing at Aberdeen Test Center (ATC)	1	2024	1	2025

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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 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower
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Events	Start		End	
	Quarter	Year	Quarter	Year
Army Interoperability Testing	4	2024	1	2025
Initial Operational Test and Evaluation (IOT&E)	4	2024	1	2025
LRIP Option #2 Award	3	2023	3	2023
LRIP Option #2 Deliveries	1	2025	1	2026
LRIP Option #3 Award	3	2024	3	2024
LRIP Option #3 Deliveries	1	2026	1	2027
FRP Lot #1 Award	3	2025	3	2025
FRP Lot #1 Deliveries	1	2027	1	2028
FRP Lot #2 Award	3	2026	3	2026
FRP Lot #2 Deliveries	1	2028	1	2029
FRP Lot #3 Award	3	2027	3	2027
FRP Lot #3 Deliveries	1	2029	1	2030
FRP Lot #4 Award	3	2028	3	2028
FRP Lot #4 Deliveries	1	2030	1	2031