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**Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604604A / <i>Medium Tactical Vehicles</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	21.354	28.226	15.088	-	15.088	6.530	36.627	3.581	3.617	0.000	115.023
H07: <i>Family Of Med Tac Veh</i>	-	21.354	28.226	15.088	-	15.088	6.530	36.627	3.581	3.617	0.000	115.023

**A. Mission Description and Budget Item Justification**

This Program Element (PE) supports continued modernization of the Army's Medium Tactical Wheeled Vehicle fleets by investigating technology insertions including, but not limited to: Predictive Logistics, vetronics, vehicle electrification and other demand reduction initiatives, Victory Architecture, autonomous operations and other emerging technologies. Furthermore, the PE supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts to include developing technologies to improve safety, survivability and mobility in an arctic environment.

The Family of Medium Tactical Vehicles (FMTV) includes Cargo, Tractor, Load Handling System (LHS), Wrecker, Expandable Van, Shop Van, and Dump variants with payloads ranging from 3-tons to 10-tons and associated companion trailers. FMTV trucks perform over 55 percent of the Army's local haul, line haul, and unit resupply missions. It operates throughout theater as multi-purpose transportation vehicles in combat, combat support, and combat service support units. Funding from this Program Element will be used to support the continued evolution of the future FMTV fleet as well as tech insertion opportunities to keep the current FMTV fleet relevant on today's battlefield. This includes upgrades in survivability and crew protection, improved safety by leveraging advancements in commercial active safety technologies, improved utilization through modularity, integration of advanced high efficiency powertrains and fuel saving technologies, and insertion of autonomous vehicle capabilities that will change the way transportation missions are conducted around the world.

FY 2025 Project H07 Base funds in the amount of \$15.088 million will be used for Demand Reduction initiatives and Improved Vehicle Safety Technologies.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	22.163	28.226	15.058	-	15.058
Current President's Budget	21.354	28.226	15.088	-	15.088
Total Adjustments	-0.809	0.000	0.030	-	0.030
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.809	-			
• Adjustments to Budget Years	-	-	0.030	-	0.030

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**Appropriation/Budget Activity**  
2040: *Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)*

**R-1 Program Element (Number/Name)**  
PE 0604604A / *Medium Tactical Vehicles*

**Change Summary Explanation**  
decrease due to minor economic adjustment.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Army										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 2040 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604604A / <i>Medium Tactical Vehicles</i>				<b>Project (Number/Name)</b> H07 / <i>Family Of Med Tac Veh</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
H07: <i>Family Of Med Tac Veh</i>	-	21.354	28.226	15.088	-	15.088	6.530	36.627	3.581	3.617	0.000	115.023
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The FMTVA2 Production and Engineering Change Proposal (ECP) modernization effort restores vehicle performance that was lost due to the addition of armor protection kits as the threat to tactical vehicles and the Family of Medium Tactical Vehicles (FMTV) has increased. The FMTVA2 also addresses Space, Weight, Power, and Cooling (SWaP-C) constraints from having to host an increasing amount of C4ISR and Counter-IED equipment. PD MTV is executing the FMTVA2 effort documented in a signed Acquisition Decision Memorandum by the AAE on 16 November 2015.

This Project also supports development of Demand Reduction initiatives such as Vehicle Electrification, Onboard Vehicle Power, Fuel Sense, Predictive Logistics (PL) and other demand reduction related technologies for the Tactical Wheeled Vehicle fleet.

The FMTVA1P2 ended production in 2021 and represents the highest density FMTV model with over 40,000 vehicles fielded to date. The FMTVA1P2 will remain in the tactical vehicle fleet until 2040 and beyond. To ensure supportability of the FMTVA1P2 through FY 2040 and beyond, the PD MTV, as lifecycle managers for the system, shall address potential obsolescence issues with the powertrain and Material Handling Equipment used on the FMTV.

Increasing survivability and crew protection of the FMTVA1P2 comes at the expense of decreased vehicle mobility and performance in soft soil and winter environments. The FMTVA1P2 is being asked to carry more weight than what it was originally designed for. Low risk, highly commercial improvements to the FMTVA1P2 driveline, suspension, and tires can be made to minimize the loss in mobility performance.

FY 2025 Project H07 Base funds in the amount of \$3.588 million will be used for development and integration of Improved Vehicle Safety Technologies, including active safety technologies such as front collision warning, collision mitigation, lane keeping assist, adaptive cruise control, and 360 degree situational awareness.

FY 2025 Project H07 Base funds in the amount of \$11.500 million will be used to continue the development, test, and integration of Demand Reduction initiatives such as Tactical Vehicle Anti-Idle Retrofit Kit, On Board Vehicle Power, Hybrid Propulsion, and other associated technologies for the Tactical Wheeled Vehicle fleet.

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

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> FMTVA2 Production and ECP Modernization Effort	2.354	0.500	3.588
<b>Description:</b> Funding used to support the continued evolution of the future FMTV fleet as well as tech insertion opportunities to keep the current FMTV fleet relevant on today's battlefield. The FMTVA2 production and ECP modernization effort restores vehicle performance that was lost due to the addition of armor protection kits as the threat to tactical vehicles and the FMTV has increased. Live Fire test assets are needed to support Live Fire Testing required per Chapter 139, Title 10 USC. Operational Testing required per Chapter 141, Title 10 USC.			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Army		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> H07 / <i>Family Of Med Tac Veh</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>FY 2024 Plans:</b> FY 2024 will continue to fund the development of Improved Vehicle Safety Technologies</p> <p><b>FY 2025 Plans:</b> FY 2025 Project H07 Base funds will be used for the development of Improved Vehicle Safety Technologies for the FMTV A2 Fleet.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funds have increased due to start of the development and integration of Improved Vehicle Safety Technologies.</p>				
<p><b>Title:</b> FMTV LVAD Next Generation Model</p> <p><b>Description:</b> Updates to the FMTV Low Velocity Air Drop (LVAD) are needed to address obsolescence issues and to modernize the fleet.</p> <p><b>FY 2024 Plans:</b> FY 2024 will fund the LVAD Automotive Production Qualification Testing, Transportation testing, LVAD Airdrop safety certification testing.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funds have decreased for the Low Velocity Air Drop Vehicle (LVAD) development as LVAD transitions to the production in FY 2025.</p>		4.000	2.726	-
<p><b>Title:</b> Climate Change Initiatives</p> <p><b>Description:</b> Funding will be used to develop Demand Reduction Engineering Change Proposals for the MTV and HTV fleets including Anti-idle, On Board Vehicle Power, Advanced Hybrid Propulsion, and Fuel Sense 2.0. Funding will also be used to develop technologies associated with Demand Reduction including battery modernization, power and energy management, and increased capability at extreme temperatures.</p> <p><b>FY 2024 Plans:</b> FY2024 Project H07 Base funds in the amount of \$25.000 million will be used to develop engineer change proposals for the MTV Anti-Idle kits and continue to fund the HTV prototype development and test. It will procure On board vehicle Power prototypes kits, fund the integration and start of test. Funds will also support testing of FuelSense 2.0 technologies, as well as fund the development of other technologies associated with the combatting climate change, power and battery modernization strategies and the support of artic strategies for the Tactical Wheeled Vehicle fleet.</p> <p><b>FY 2025 Plans:</b></p>		15.000	25.000	11.500

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Army		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> H07 / <i>Family Of Med Tac Veh</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
FY2025 Project H07 Base funds in the amount of \$11.500 million will be used for the continuation of engineering change proposals for the FMTV and FHTV test for Anti-Idle, On-Board Vehicle Power and fund the integration and start of test. Funds will also support the continuation of the development of other technologies associated with Demand Reduction, power and battery modernization strategies, and the support of arctic strategies for the Tactical Wheeled Vehicle fleet.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funds represent a decrease due to the completion of prototypes, beginning of test, and the transition in FY 2026 to production.			
<b>Accomplishments/Planned Programs Subtotals</b>	21.354	28.226	15.088

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• D15500: <i>Family Of Medium Tactical Veh (FMTV)</i>	211.378	110.734	133.924	-	133.924	128.049	104.308	127.969	85.621	0.000	901.983
• D04016: <i>MEDIUM TACTICAL VEHICLE PROTECTION KITS</i>	-	-	-	-	-	-	-	-	-	-	-

**Remarks**

**D. Acquisition Strategy**

The strategy to develop, integrate, and test Improved Vehicle Safety Technologies is to leverage active safety capabilities developed commercially and adapt for military use on the FMTV. The development and integration will be conducted either via STS Task Order with the vehicle OEM or an Other Transaction Authority (OTA) with industry.

The FMTV program will continually monitor emerging technologies and capabilities and leverage existing partnerships within the science and technology centers as well as through industry market research and partnerships in order to support Demand Reduction initiatives such as Vehicle Electrification, Onboard Vehicle Power, Fuel Sense, Predictive Logistics (PL) and other demand reduction related technologies for the Tactical Wheeled Vehicle fleet. The anticipated outcomes of these efforts are fully validated Engineering Change Proposals that can be applied to the current and future FMTV fleet.

The FMTV program will procure prototypes via Other Transaction Authority (OTA) Agreements for test and evaluation, including soldier touch points to gain user feedback. The OTAs then offer a path to transition to production.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> H07 / <i>Family Of Med Tac Veh</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
FMTV Improved Vehicle Safety Technologies	MIPR	ATEC : ABERDEEN PROVING GROUNDS, MD	2.700	0.600	Mar 2023	0.500	Mar 2024	3.588	Mar 2025	-		3.588	0.000	7.388	-
Climate Change Initiatives	TBD	tbd : tbd	-	15.000	Mar 2023	25.000	Jun 2024	11.500	Mar 2025	-		11.500	0.000	51.500	-
FMTV Implementation of Predictive logistics	TBD	tbd : tbd	0.300	-		-		-		-		-	0.000	0.300	-
LVAD PROTOTYPES FMTV	SS/FFP	OshKosh Defense : OshKosh, WI	-	3.392		-		-		-		-	0.000	3.392	-
<b>Subtotal</b>			3.000	18.992		25.500		15.088		-		15.088	0.000	62.580	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
FMTV LVAD Testing	MIPR	Army Test Center (ATC) : Aberdeen Proving Grounds, MD	0.477	2.362	Nov 2022	-		-		-		-	0.000	2.839	-
LVAD PVT / PQT	MIPR	Army Test Center (ATC) : Aberdeen Proving Grounds, MD	-	-		2.726	Mar 2024	-		-		-	0.000	2.726	-
<b>Subtotal</b>			0.477	2.362		2.726		-		-		-	0.000	5.565	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	3.477	21.354	28.226	15.088	-	15.088	0.000	68.145	N/A

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> H07 / <i>Family Of Med Tac Veh</i>
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Event Name	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029																			
	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																
<b>FMTVA2</b>																																												
FMTVA2 Operational Testing (OT)	OT																																											
FMTVA2 Type Classification and Material Release (TC/MR)																																												
					1 TC/MR																																							
FMTVA2 First Unit Equipped (FUE)					2 FUE																																							
<b>FMTV LVAD NEXT GENERATION MODEL</b>																																												
FMTV LVAD Next Generation Model Analysis	LVAD Feasibility Study																																											
FMTV LVAD Live Fire Test	LVAD LF																																											
FMTV LVAD Air Drop / Production Qualification Testing (PQT)	LVAD PVT / PQT																																											
FMTV LVAD TRANSITION TO PROCUREMENT									3 LVAD Production Transition																																			
FMTV Improved Vehicle Safety Development Integration Testing													Vehicle Safety Test																															
<b>FMTV Climate Change Initiatives</b>																																												
Electrification Anti-Idle	Anti Idle / Hybridization																																											
Electrification Demand Reduction Initiatives													4 Transition to Production																															

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Army		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604604A / <i>Medium Tactical Vehicles</i>	<b>Project (Number/Name)</b> H07 / <i>Family Of Med Tac Veh</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FMTVA2	1	2019	4	2024
FMTVA2 Contract Award/Delivery Order 1	2	2018	2	2018
FMTVA2 Allocated Baseline Review (ABR)	3	2018	3	2018
FMTVA2 Product Baseline Review (PBR)	4	2018	4	2018
FMTVA2 Delivery Order 2 (DO2)	4	2021	4	2021
FMTVA2 Production Validation Testing (PVT)	3	2019	4	2021
FMTVA2 Live Fire Test & Evaluation (LFT&E)	3	2019	4	2019
FMTVA2 Delivery Order 3 (DO3)	4	2021	4	2021
FMTVA2 Operational Testing (OT)	4	2022	2	2023
FMTVA2 Type Classification and Material Release (TC/MR)	4	2023	4	2023
FMTVA2 First Unit Equipped (FUE)	4	2023	4	2023
FMTVA1P2	1	2019	4	2019
FMTVA1P2 FY 2018 Vehicle Delivery	4	2018	4	2019
FMTV LVAD NEXT GENERATION MODEL	3	2020	2	2025
FMTV LVAD Next Generation Model Analysis	4	2021	4	2024
FMTV LVAD Live Fire Test	3	2022	3	2023
FMTV LVAD Air Drop / Production Qualification Testing (PQT)	3	2022	4	2025
FMTV LVAD TRANSITION TO PROCUREMENT	1	2025	1	2025
FMTV Improved Vehicle Safety Development Integration Testing	2	2025	4	2025
FMTV Climate Change Initiatives	2	2023	4	2025
Electrification Anti-Idle	2	2023	4	2025
Electrification Demand Reduction Initiatives	4	2025	4	2025