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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2023 Army **Date:** April 2022

<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 0605028A / <i>Armored Multi-Purpose Vehicle (AMPV)</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	76.140	35.560	-	-	-	0.000	0.000	0.000	0.000	0.000	111.700
EB5: <i>Armored Multi-Purpose Vehicle</i>	-	76.140	35.560	-	-	-	-	-	-	-	0.000	111.700

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

This funding line is directly aligned to the Next Generation Combat Vehicle (NGCV) Army Modernization Priority. The Armored Multi-Purpose Vehicle (AMPV) is the materiel solution for replacement of the Army's Armored Personnel Carrier (M113) Family of Vehicles (FoV) within the Armored Brigade Combat Team (ABCT). It will mitigate current and future capability gaps in force protection, mobility, reliability, and interoperability across the Spectrum of Conflict. The AMPV will replace five mission roles currently performed by the M113 FoV by transferring the current M113 mission equipment packages to a new Military Vehicle Derivative platform. In total, the AMPV FoV will account for approximately 30% of the ABCT's tracked fleet and consists of the following five variants:

1. Mission Command Vehicle (MCcmd): This platform enables effective mission command planning and execution for both the Tactical Operations Center and Tactical Command Vehicle versions of the MCcmd. It will host current Battle Command Systems, future replacements, and upgrades of hardware and software.
2. Medical Treatment (MT) Vehicle: This platform will provide a protected surgical environment, with adequate lighting and accessible medical equipment. It will provide a capability for immediate medical care for one patient by a medical crew of four.
3. Medical Evacuation (ME) Vehicle: This platform will conduct ambulance type activities and provide casualty evacuation for up to four litters or six ambulatory patients, with a crew of three medical attendants.
4. General Purpose (GP) Vehicle: This platform will operate throughout the battle space by conducting re-supply, maintenance, casualty evacuation, and other tasks within the formation.
5. Mortar Carrier (MC) Vehicle: This platform will provide immediate responsive fire support to conduct fast-paced offensive operations.

The AMPV program was initiated as an Acquisition Category (ACAT) ID program at Milestone B (MS B). The Defense Acquisition Executive signed the Acquisition Decision Memorandum (ADM) on 22 December 2014, authorizing entry into the Engineering and Development phase and approving contract award to BAE Systems Land & Armaments, L.P. The vehicle was developed to the Capability Development Document, which was approved 21 June 2013 and revised 24 October 2016. The DAE issued an ADM 26 September 2017 that approved revising the acquisition documentation tailoring plan, revising Milestone C entrance criteria, and increasing the Low Rate Initial Production (LRIP) quantity to 551 vehicles (to recognize the Army's desire for early fielding of AMPVs for the European Deterrence Initiative). AMPV was re-designated as an ACAT IC program on 1 November 2017, with the Army Acquisition Executive (AAE) and as the Milestone Decision Authority. The Army convened an Army Systems Acquisition Review Council (ASARC) for Milestone C on December 20, 2018, and the AAE signed the ADM on January 25, 2019. As a result of vehicle delivery delays, the AAE approved a revised Acquisition Program Baseline to adjust the program schedule on January 7, 2021.

The Fiscal Year (FY) 2022 planned program primarily consists of continued efforts associated with Production Qualification Testing (PQT), Initial Operational Test & Evaluation (IOT&E), Live Fire Test and Evaluation (LFT&E) and corrective action implementation resulting from test results. Prime contractor support will be required

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for testing and engineering to ensure adequate system support packages will be available during the tests. Government test locations will be used for the tests and government personnel will be responsible for the overall management of the efforts.

<b>B. Program Change Summary (\$ in Millions)</b>	<b><u>FY 2021</u></b>	<b><u>FY 2022</u></b>	<b><u>FY 2023 Base</u></b>	<b><u>FY 2023 OCO</u></b>	<b><u>FY 2023 Total</u></b>
Previous President's Budget	76.140	35.560	0.000	-	0.000
Current President's Budget	76.140	35.560	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Army										<b>Date:</b> April 2022		
<b>Appropriation/Budget Activity</b> 2040 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0605028A / <i>Armored Multi-Purpose Vehicle (AMPV)</i>				<b>Project (Number/Name)</b> EB5 / <i>Armored Multi-Purpose Vehicle</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
EB5: <i>Armored Multi-Purpose Vehicle</i>	-	76.140	35.560	-	-	-	-	-	-	-	0.000	111.700
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Armored Multi-Purpose Vehicle (AMPV) is the materiel solution for replacement of the Army's Armored Personnel Carrier (M113) Family of Vehicles (FoV) within the Armored Brigade Combat Team (ABCT). It will mitigate current and future capability gaps in force protection, mobility, reliability, and interoperability across the Spectrum of Conflict. The AMPV will replace five mission roles currently performed by the M113 FoV by transferring the current M113 mission equipment packages to a new Military Vehicle Derivative platform. In total, the AMPV FoV will account for approximately 30% of the ABCT's tracked fleet and consists of the following five variants:

1. Mission Command (MCmd) Variant: This platform enables effective mission command planning and execution for both the Tactical Operations Center and Tactical Command Vehicle versions of the MCmd. It will host current Battle Command Systems, future replacements, and upgrades of hardware and software.
2. Medical Treatment (MT) Variant: This platform will provide a protected surgical environment, with adequate lighting and accessible medical equipment. It will provide a capability for immediate medical care for one patient by a medical crew of four.
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The AMPV program was initiated as an Acquisition Category (ACAT) ID program at Milestone B (MS B). The Defense Acquisition Executive signed the Acquisition Decision Memorandum (ADM) on 22 December 2014, authorizing entry into the Engineering and Development phase and approving contract award to BAE Systems Land & Armaments, L.P. The vehicle was developed to the Capability Development Document, which was approved 21 June 2013 and revised 24 October 2016. The DAE issued an ADM 26 September 2017 that approved revising the acquisition documentation tailoring plan, revising Milestone C entrance criteria, and increasing the Low Rate Initial Production (LRIP) quantity to 551 vehicles (to recognize the Army's desire for early fielding of AMPVs for the European Deterrence Initiative). AMPV was re-designated as an ACAT IC program on 1 November 2017, with the Army Acquisition Executive (AAE) and as the Milestone Decision Authority. The Army convened an Army Systems Acquisition Review Council (ASARC) for Milestone C on December 20, 2018, and the AAE signed the ADM on January 25, 2019. As a result of vehicle delivery delays, the AAE approved a revised Acquisition Program Baseline to adjust the program schedule on January 7, 2021.

The Fiscal Year (FY) 2022 planned program primarily consists of finalizing efforts associated with Production Qualification Testing (PQT), Initial Operational Test & Evaluation (IOT&E), Live Fire Test and Evaluation (LFT&E) and corrective action implementation resulting from test results. Prime contractor support will be required for testing and engineering to ensure adequate system support packages will be available during the tests. Government test locations will be used for the tests and

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<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605028A / <i>Armored Multi-Purpose Vehicle (AMPV)</i>	<b>Project (Number/Name)</b> EB5 / <i>Armored Multi-Purpose Vehicle</i>		
government personnel will be responsible for the overall management of the efforts. This program supports the Next Generation Combat Vehicle (NGCV) Cross Functional Team (CFT).				
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<p><b>Title:</b> Armored Multi-Purpose Vehicle (AMPV) Product Development</p> <p><b>Description:</b> AMPV Product Development costs include all efforts provided under the AMPV Engineering and Manufacturing Development (EMD) prime contract along with Government Furnished Material (GFM). Significant examples of prime contract effort include: development engineering, system engineering/program management, prototype hardware procurement, prototype system level fabrication and integration, software development, support to the government test program, and oversight of subcontractors/suppliers. Also included are all efforts performed by subcontractors / suppliers who are under contract to the AMPV EMD prime contractor. This element also includes the recurring manufacturing cost to procure the vehicles that will support Full-Up System Level (FUSL) live fire testing.</p> <p><b>FY 2022 Plans:</b> Prime contractor activities in FY2022 consist of ongoing efforts that support PQT, LFT&amp;E, IOT&amp;E and design efforts to address changes stemming from said tests and/or to satisfy other emerging Army requirements. As required, the contractor will continue to analyze the results of the testing program and incorporate any necessary design changes into LRIP vehicles. Based on all engineering design work, the contractor will also update and deliver a Technical Data Package (TDP) as well as continue work related to Logistics/Product Support to ensure the AMPV can be organically maintained. Will continue to evaluate, verify and validate additional AMPV capabilities required to counter evolving threats in multi-domain operations including, but not limited to, the AMPV key performance parameters and system attributes, Army's integrated tactical network, vehicle prognostics/predictive maintenance, producibility and cybersecurity/software.</p> <p><b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> Decrease from FY2022 to FY2023 is due to program funding for AMPV RDT&amp;E completing with FY2022 funding.</p>		34.797	23.353	-
<p><b>Title:</b> AMPV Government Program Management Costs</p> <p><b>Description:</b> AMPV Government Program Management costs include efforts to provide Government oversight of the AMPV program. This includes Systems Engineering and Program Management. Government and support Contractor salaries are included, as well as travel and other support costs that are required to effectively manage the program. Costs in this category do not include Government Furnished Material or efforts that are specific and unique to end item testing that is performed at Government test locations.</p> <p><b>FY 2022 Plans:</b> Provide continued integrated program management for all development activities, to include providing oversight to BAE. The primary area of emphasis for the RDT&amp;E funded Government Project Management team in FY2022 is to provide oversight to</p>		2.171	2.719	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<p>those LRIP activities that are traceable to PQT, LFT&amp;E, and IOT&amp;E. All other Government Program Management efforts in support of LRIP will be covered by Procurement funding. As required, the AMPV Government Project Management team will support Army assessment and experimentation efforts relating to emerging Army requirements impacting the AMPV design.</p> <p><b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> Decrease from FY2022 to FY2023 is due to program funding for AMPV RDT&amp;E completing with FY2022 funding.</p>				
<p><b>Title:</b> Government Test Costs</p> <p><b>Description:</b> Government Test costs are for efforts required to perform and validate system-related tests. This element includes costs of the detailed planning, conduct, support, data reduction, and reports from such testing. Also included are costs necessary to acquire data during the conduct of the Government tests. The actual test articles (i.e., functionally configured systems) are excluded from this element. Also excluded are prime contractor costs incurred in support of the Government system level test.</p> <p><b>FY 2022 Plans:</b> Government Test costs in FY2022 reflect ongoing LRIP testing activities, test data evaluation, and final reporting for PQT, LFT&amp;E, and IOT&amp;E. PQT began 1QFY2021 and is planned to conclude in FY2022. LFT&amp;E is scheduled to begin 2QFY2021 and end in FY2022. IOT&amp;E is scheduled to start during the first half of FY2022 and will be conducted under realistic operational conditions using Army units executing decisive action operations IAW U.S. Army doctrine against a representative OPFOR. The test events are designed to produce data to satisfy evaluation requirements in order to assess the operational effectiveness and suitability of the system undergoing test. The location of the IOT will be determined by the Army TSARC based on availability of units and maneuver area (at this time the location is assumed to be Fort Stewart, GA). PdM AMPV will support contractor Instructor and Key Personnel Training (I&amp;KPT), OPNET, and FLMNET. PdM AMPV will also provide a New Material Introductory Briefing (NMIB) to the IOT unit prior to OPNET, and finalize with the unit the target audience for New Equipment Training. PdM AMPV will further plan and coordinate any follow-on developmental and/or operational testing required due to configuration changes during production, or verification that any post-production deficiencies in materiel, training, or concepts have been satisfactorily corrected.</p> <p><b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> Decrease from FY2022 to FY2023 is due to program funding for AMPV RDT&amp;E completing with FY2022 funding.</p>		39.172	8.190	-
<p><b>Title:</b> FY2022 SBIR/STTR Transfer</p> <p><b>Description:</b> FY2022 SBIR/STTR transfer.</p> <p><b>FY 2022 Plans:</b> Funding transferred in accordance with Title 15 USC ?638</p> <p><b>FY 2022 to FY 2023 Increase/Decrease Statement:</b></p>		-	1.298	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
Funding transferred in accordance with Title 15 USC 2638			
<b>Accomplishments/Planned Programs Subtotals</b>	76.140	35.560	-

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

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To	
										Complete	Total Cost
• G80819: Armored Multi Purpose Vehicle (AMPV)	56.000	83.346	380.677	-	380.677	682.429	678.352	677.655	677.722	10,659.603	13,895.784

**Remarks**

**D. Acquisition Strategy**

The AMPV program was initiated at Milestone B (MS B). The 22 December 2014 MS B Acquisition Decision Memorandum (ADM) approved contract award for the Engineering and Manufacturing Development phase plus three Low Rate Initial Production (LRIP) options to BAE Systems Land & Armaments, L.P. on a competitive basis. The Army Acquisition Executive (AAE) approved the Milestone C ADM on January 25, 2019, authorizing Low Rate Initial Production. All three LRIP options have since been exercised. As a result of vehicle delivery delays, the AAE approved a revised Acquisition Program Baseline to adjust the program schedule on January 7, 2021.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army												Date: April 2022			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 5				PE 0605028A / Armored Multi-Purpose Vehicle (AMPV)				EB5 / Armored Multi-Purpose Vehicle							
Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
SBIR/STTR Transfer	Allot	OASA(FM&C) : Washington, D.C.	-	-		1.298		-		-		-	0.000	1.298	-
<b>Subtotal</b>			-	-		1.298		-		-		-	0.000	1.298	N/A
Product Development (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Contractor Development Engineering	C/CPIF	BAE : Sterling Heights, MI	241.845	19.393	Dec 2020	11.569	Dec 2021	-		-		-	0.000	272.807	-
Prototype Material Contractor	C/CPIF	BAE : Sterling Heights, MI	119.298	-		-		-		-		-	0.000	119.298	-
Prototype Material Government Furnished	Various	Various : .	27.673	-		-		-		-		-	0.000	27.673	-
Contractor System Engineering, Data, Test and Program Management	C/CPIF	BAE : Sterling Heights, MI	158.104	6.259	Dec 2020	5.995	Dec 2021	-		-		-	0.000	170.358	-
Procurement of Live Fire Test Assets	Option/ FPIF	BAE : York, PA	50.650	-		-		-		-		-	0.000	50.650	-
Contractor Support to Qualification, Live Fire, & Operational Testing	C/CPIF	BAE : Sterling Heights, MI	49.208	9.145	Dec 2020	5.789	Dec 2021	-		-		-	0.000	64.142	-
<b>Subtotal</b>			646.778	34.797		23.353		-		-		-	0.000	704.928	N/A
Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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
Program Management Support	MIPR	PMO : Warren, MI	117.971	2.171	Dec 2020	2.719	Dec 2021	-		-		-	0.000	122.861	-
FY 2018 NDAA SEC 825 MDAP Cost Overrun	Allot	OASA(FM&C) : Washington, D.C.	0.170	-		-		-		-		-	0.000	0.170	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army** **Date:** April 2022

<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605028A / Armored Multi-Purpose Vehicle (AMPV)	<b>Project (Number/Name)</b> EB5 / Armored Multi-Purpose Vehicle
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<b>Support (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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			
<b>Subtotal</b>			118.141	2.171		2.719		-		-		-	0.000	123.031	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 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 System Testing	MIPR	Various : .	113.452	39.172	Dec 2020	8.190	Dec 2021	-		-		-	0.000	160.814	-
<b>Subtotal</b>			113.452	39.172		8.190		-		-		-	0.000	160.814	N/A

**Remarks**  
 Testing locations are as follows. Aberdeen Test Center (ATC) = Maryland, Yuma Test Center (YTC) = Arizona, White Sands Missile Range (WSMR) = New Mexico, Electronic Proving Ground (EPG) = Arizona, Cold Regions Test Center (CRTC) = Alaska, Tropic Regions Test Center (TRTC) = Suriname, South America, Dugway Proving Grounds (DPG) = Utah

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	878.371	76.140	35.560	-	-	-	0.000	990.071	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2023 Army</b>			<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 2040 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605028A / Armored Multi-Purpose Vehicle (AMPV)	<b>Project (Number/Name)</b> EB5 / Armored Multi-Purpose Vehicle	

Event Name	FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027			
	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
EMD Contract																												
Production Qualification Testing																												
Live Fire Test																												
Initial Operational Test & Evaluation																												
Full Rate Production Decision																												
First Unit Equipped																												
Initial Operational Capability																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2023 Army		<b>Date:</b> April 2022
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone B Decision	1	2015	1	2015
EMD Contract	1	2015	4	2022
Preliminary Design Review	3	2015	3	2015
Critical Design Review	3	2016	3	2016
Production Prove Out Test	4	2017	4	2018
Limited User Test	4	2018	1	2019
Milestone C	2	2019	2	2019
Low Rate Initial Production 1	2	2019	2	2019
Production Qualification Testing	1	2021	3	2022
Live Fire Test	2	2021	2	2022
Initial Operational Test & Evaluation	2	2022	3	2022
Full Rate Production Decision	1	2023	1	2023
First Unit Equipped	2	2023	2	2023
Initial Operational Capability	2	2023	2	2023