

UNCLASSIFIED

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

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605812A / <i>Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)</i>
--	--

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	-	2.470	9.376	27.243	-	27.243	26.959	43.187	43.452	42.506	Continuing	Continuing
VU9: <i>Joint Light Tactical Vehicle</i>	-	2.470	9.376	27.243	-	27.243	26.959	43.187	43.452	42.506	Continuing	Continuing

A. Mission Description and Budget Item Justification

The JLTV Family of Vehicles (FoV), to include a companion trailer, is a United States Army (USA) acquisition lead, joint program with the U.S. Marine Corps (USMC). The JLTV is capable of performing multiple mission roles and designed to provide protected, sustained, networked mobility for personnel and payloads across the full range of military operations. JLTV objectives include increased protection and performance over the current fleet; and, minimizing ownership costs by maximizing commonality, fuel efficiency, reliability, and maintaining effective competition throughout the life cycle. Commonality of components, maintenance procedures, training, etc., among vehicles is expected to be inherent in FoV solutions across mission variants to minimize total ownership cost. Unique service requirements have been minimized. The JLTV Trailer (JLTV-T) is the companion trailer to the JLTV and safely carries its payload while maintaining the same mobility characteristics of the prime mover. The trailer requirement as defined in the Capability Production Document (CPD), dated 21 November 2014 was validated on 7 June 2019 by the Army and required the JLTV and JLTV-T to be fielded as a system. On November 2019, Army Futures Command validated the JLTV-T Army Procurement Objective (APO) of 18,224. The Follow-on JLTV Contract was awarded on 09 February 2023 as a single award five year requirements contract with five one year options.

This program element supports modernization of the JLTV FoV by investigating technology insertions including, but not limited to: predictive logistics, vetronics, Victory Architecture, autonomous operations and other emerging technologies. This program element also supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts.

The FY 2024 budget funds the Follow-on-Contract Live Fire Testing and the development and continuation of engineering efforts that include development of acoustic mitigation, occupant safety/survivability, JLTV and JLTV-T mission sets (e.g. - Assault Kitchen) and artic enhancements. Funding also supports the development on JLTV Anti-Idle and the development of Hybrid Electric Vehicles (HEV) and Battery Electric vehicles (BEV) that support the Army Climate Change Strategy (Line of Effort 2.1) to modernize existing platforms by adding electrification technologies, (Line of Effort 2.2) to field purpose-built hybrid-drive tactical vehicles, and mitigates a gap in Large-Scale Combat Operations to employ semi-independent maneuver in a Multi-Domain Operational (MDO) environment. A JLTV HEV/BEV will seek to improve and provide new capabilities such as silent mobility, extended silent watch, reduced fuel consumption, increased automotive performance, increased on-board vehicle power (Direct Current), available export power (Alternating Current), integrated charging, potential Vehicle-To-Grid (V2G) and reduced greenhouse gas emissions.

UNCLASSIFIED

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

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605812A / <i>Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)</i>
--	--

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	2.564	9.376	9.562	-	9.562
Current President's Budget	2.470	9.376	27.243	-	27.243
Total Adjustments	-0.094	0.000	17.681	-	17.681
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.094	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	17.681	-	17.681

Change Summary Explanation

Increased funding for climate change initiatives related to ground vehicles and fuels.

UNCLASSIFIED

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 0605812A / <i>Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)</i>				Project (Number/Name) VU9 / <i>Joint Light Tactical Vehicle</i>			
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
VU9: <i>Joint Light Tactical Vehicle</i>	-	2.470	9.376	27.243	-	27.243	26.959	43.187	43.452	42.506	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The JLTV Family of Vehicles (FoV), to include a companion trailer, is a United States Army (USA) acquisition lead, joint program with the U.S. Marine Corps (USMC). The JLTV is capable of performing multiple mission roles and designed to provide protected, sustained, networked mobility for personnel and payloads across the full range of military operations. JLTV objectives include increased protection and performance over the current fleet; and, minimizing ownership costs by maximizing commonality, fuel efficiency, reliability, and maintaining effective competition throughout the life cycle. Commonality of components, maintenance procedures, training, etc., among vehicles is expected to be inherent in FoV solutions across mission variants to minimize total ownership cost. Unique service requirements have been minimized. The JLTV Trailer (JLTV-T) is the companion trailer to the JLTV and safely carries its payload while maintaining the same mobility characteristics of the prime mover. The trailer requirement as defined in the Capability Production Document (CPD), dated 21 November 2014 was validated on 7 June 2019 by the Army and required the JLTV and JLTV-T to be fielded as a system. On November 2019, Army Futures Command validated the JLTV-T Army Procurement Objective (APO) of 18,224. The Follow-on JLTV Contract was awarded on 09 February 2023 as a single award five year requirements contract with five one year options.

This program element supports modernization of the JLTV FoV by investigating technology insertions including, but not limited to: predictive logistics, vetronics, Victory Architecture, autonomous operations and other emerging technologies. This program element also supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts.

The FY 2024 budget funds the Follow-on-Contract Live Fire Testing and the development and continuation of engineering efforts that include development of acoustic mitigation, occupant safety/survivability, JLTV and JLTV-T mission sets (e.g. - Assault Kitchen) and artic enhancements. Funding also supports the development on JLTV Anti-Idle and the development of Hybrid Electric Vehicles (HEV) and Battery Electric vehicles (BEV) that support the Army Climate Change Strategy (Line of Effort 2.1) to modernize existing platforms by adding electrification technologies, (Line of Effort 2.2) to field purpose-built hybrid-drive tactical vehicles, and mitigates a gap in Large-Scale Combat Operations to employ semi-independent maneuver in a Multi-Domain Operational (MDO) environment. A JLTV HEV/BEV will seek to improve and provide new capabilities such as silent mobility, extended silent watch, reduced fuel consumption, increased automotive performance, increased on-board vehicle power (Direct Current), available export power (Alternating Current), integrated charging, potential Vehicle-To-Grid (V2G) and reduced greenhouse gas emissions.

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

	FY 2022	FY 2023	FY 2024
Title: Evaluation and Assessment of current and future engineering efforts	1.927	1.082	0.314
Description: Funding is provided for the support of JLTV evaluation and assessment of current and future engineering efforts.			
FY 2023 Plans:			

UNCLASSIFIED

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 0605812A / <i>Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)</i>	Project (Number/Name) VU9 / <i>Joint Light Tactical Vehicle</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Development and continuation of engineering efforts including: development of occupant safety and survivability technologies; integration of emerging requirements related to lethality, utility, C5ISR (capability sets) and operational needs. FY 2024 Plans: Development and continuation of engineering efforts that include development of acoustic mitigation, occupant safety/survivability, JLTV and JLTV-T mission sets (e.g. - Assault Kitchen) and artic enhancements. FY 2023 to FY 2024 Increase/Decrease Statement: Decrease in funding from FY23 to FY24 due to completion of engineering efforts including integration of emerging requirements related to lethality, utility, C5ISR (capability sets) and operational needs.				
Title: Evaluation and assessment of current and future Climate Change initiatives Description: Funding is provided for the support of JLTV evaluation and assessment of current and future Climate Change initiatives FY 2023 Plans: Development and continuation of engineering efforts including: Continuation of JLTV Electrification analysis and demonstrations in support of vehicle electrification to determine the propulsion system sizing that would be required to deliver similar/optimal mobility to the current conventional propulsion system; development and integration of Climate Change initiatives and reduced liquid logistics such as anti-idle technology on the JLTV A1/A0. FY 2024 Plans: FY2024 JLTV Climate Change budget activities will finalize the design/test or JLTV A1 Anti-Idle kits and initiate the JLTV HEV/BEV design, development and testing for prototype solutions. FY 2023 to FY 2024 Increase/Decrease Statement: Increase in funding from FY23 to FY24 due to initial development of hybrid electric propulsion for the JLTV A2.		0.543	7.500	24.311
Title: Test Assets - Follow-on Contract (FOC) Description: Procurement of test assets - Follow-on Contract (FOC) FY 2023 Plans: Procurement of 1 JLTV General Purpose truck, 1 cab test asset, and kits in support of Follow-on Contract Live Fire testing. FY 2023 to FY 2024 Increase/Decrease Statement:		-	0.452	-

UNCLASSIFIED

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 0605812A / Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)	Project (Number/Name) VU9 / Joint Light Tactical Vehicle		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Decrease due to requirement being satisfied in FY23.				
Title: Live Fire Testing - Follow-on Contract (FOC)		-	-	0.713
Description: Live Fire Testing - Follow-on Contract (FOC)				
FY 2024 Plans: Live Fire Testing - Follow-on Contract (FOC)				
FY 2023 to FY 2024 Increase/Decrease Statement: Increase due to Live-Fire testing requirement beginning in FY24.				
Title: Follow-on Contract (FOC) contractor support for Test Assets		-	-	0.916
Description: Follow-on Contract (FOC) contractor support for Test Assets.				
FY 2024 Plans: Contractor FOC support.				
FY 2023 to FY 2024 Increase/Decrease Statement: Increase due to FOC Contractor support for the Live-Fire testing beginning in FY24.				
Title: SBIR/STTR Transfer		-	0.342	-
Description: Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR)				
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.				
Title: JLTV - Hybrid Electric Vehicle (HEV) Support		-	-	0.989
FY 2024 Plans: Support for the development of the Hybrid Electric Vehicle (HEV) program to include program management and monitoring of vendor performance.				
FY 2023 to FY 2024 Increase/Decrease Statement:				

UNCLASSIFIED

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 0605812A / Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)	Project (Number/Name) VU9 / Joint Light Tactical Vehicle

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Increase due to requirement beginning in FY24.			
Accomplishments/Planned Programs Subtotals	2.470	9.376	27.243

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
• D15610: JOINT LIGHT TACTICAL VEHICLE FAMILY OF VEHICLES	574.562	664.071	839.413	-	839.413	817.663	784.748	784.233	788.576	Continuing	Continuing
• D15615: JOINT LIGHT TACTICAL VEHICLE (JLTV)	496.122	592.225	786.946	-	786.946	769.416	743.156	742.672	746.980	Continuing	Continuing
• D15618: JOINT LIGHT TACTICAL VEHICLE TRAILER (JLTV-T)	78.440	71.846	52.467	-	52.467	48.247	41.592	41.561	41.596	Continuing	Continuing
• D00929: JOINT LIGHT TACTICAL VEHICLE (JTLV) MOD-IN-SERVICE	7.190	8.084	8.055	-	8.055	28.213	48.597	68.442	68.500	Continuing	Continuing
• MC - 5095: JOINT LIGHT TACTICAL VEHICLE (JLTV) - USMC	332.282	214.751	232.500	-	232.500	281.222	301.844	635.989	587.135	Continuing	Continuing
• MC - 0605813M: JOINT LIGHT TACTICAL VEHICLE (JLTV) - USMC	1.921	2.856	2.609	-	2.609	2.485	2.289	2.322	2.368	Continuing	Continuing

Remarks
JLTV is a Joint Program with the United States Marine Corps (USMC)

D. Acquisition Strategy
The JLTV Family of Vehicles (FoV), to include a companion trailer, is a United States Army (USA) acquisition lead, joint program with the U.S. Marine Corps (USMC).

The JLTV Program entered the Production and Deployment Phase with the Acquisition Decision Memorandum authorization on 25 August 2015. With Milestone C approval, the Low Rate Initial Production (LRIP) fixed price contract was awarded to Oshkosh Defense LLC on 25 August 2015. This contract consisted of a three year LRIP period with options for five additional years of Full Rate Production (FRP) deliveries. JPO JLTV procured the Technical Data Package (TDP) with appropriate data rights to allow for possible future competition for production vehicles and spares. Current contract options may be exercised through 30 November 2023. The Follow-on JLTV Contract was awarded on 09 February 2023 as a single award five year requirements contract with five one year options.

UNCLASSIFIED

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 0605812A / <i>Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)</i>	Project (Number/Name) VU9 / <i>Joint Light Tactical Vehicle</i>
<p>A split procurement will occur between the existing Oshkosh Contract and AM General based on the approved acquisition strategy through FY24.</p> <p>Program achieved a successful FRP decision in May 2019. The FRP Acquisition Decision Memorandum was signed in June 2019.</p> <p>The trailer requirement as defined in the Capability Production Document (CPD), dated 21 November 2014 was validated on 7 June 2019 by the Army and required the JLTV-T to be fielded to units receiving JLTV trucks with a documented trailer requirement. In November 2019, Army Futures Command validated the JLTV-T Army Procurement Objective (APO) of 18,224. In June 2020, the 1st JLTV Trailer Production Contract was awarded to Oshkosh for 1,410 Army JLTV-Ts.</p> <p>The JLTV program will continually monitor emerging technologies and capabilities through its partnerships with U.S. Army and Marine Corps science and technology organizations as well as through industry market research and partnerships. The JLTV program will look for opportunities to implement increased capabilities throughout the systems Life Cycle. Engineering initiatives will directly support the Army Climate Change Strategy and the operational needs of the Soldier. The anticipated outcome of these initiatives are fully validated Engineering Change Proposals (ECPs) that can be applied to the current and future JLTV fleet.</p>		

UNCLASSIFIED

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 0605812A / Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)	Project (Number/Name) VU9 / Joint Light Tactical Vehicle
--	--	--

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			
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.342		-		-		-	0.000	0.342	-
Subtotal			-	-		0.342		-		-		-	0.000	0.342	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			
Evaluation and Assessment of current and future engineering efforts	C/Various	Various : Various	15.645	1.927	Oct 2022	1.082	Feb 2023	0.314	Jan 2024	-		0.314	Continuing	Continuing	Continuing
Test Assets - Follow-on Contract (FOC)	C/TBD	TBD : TBD	-	-		0.452	Feb 2023	-		-		-	0.000	0.452	-
Follow-on Contract (FOC) support for Test Assets	C/TBD	TBD : TBD	-	-		-		0.916	Nov 2023	-		0.916	0.000	0.916	-
Climate Change initiatives	C/Various	Various : Various	0.450	0.543	May 2022	7.500	Dec 2022	24.311	Oct 2023	-		24.311	Continuing	Continuing	-
Subtotal			16.095	2.470		9.034		25.541		-		25.541	Continuing	Continuing	N/A

Remarks
The FY 2024 budget funds Follow-on Contract live fire and survivability testing and supports acceleration of Climate Change initiatives.

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			
JLTV - HEV	MIPR	Ground Vehicle Systems Center (GVSC) : Warren, MI	-	-		-		0.989		-		0.989	Continuing	Continuing	-
Subtotal			-	-		-		0.989		-		0.989	Continuing	Continuing	N/A

Remarks
Funding for Support Costs has shifted from RDT&E to Procurement and Operation and Maintenance Army (OMA).

UNCLASSIFIED

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 0605812A / Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)	Project (Number/Name) VU9 / Joint Light Tactical Vehicle

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
Evaluation and Assessment	[Blue bar]																											
JLTV Utility Multipurpose Protected Shelter (JUMPS)	[Blue bar]																											
Climate Change - Anti-Idle	[Blue bar]																											
JLTV Electrification Analysis	[Blue bar]																											
JLTV Hybrid Electric Vehicle	[Blue bar]																											
Survivability	[Blue bar]																											
Acoustic Mitigation	[Blue bar]																											
3PMSF Winter Tires	[Blue bar]																											
Competitive Follow-On Contract Award	[Blue triangle]																											
Follow-on Contract Live Fire and Survivability Testing	[Blue bar]																											

UNCLASSIFIED

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 0605812A / Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)	Project (Number/Name) VU9 / Joint Light Tactical Vehicle

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Evaluation and Assessment	3	2018	4	2037
JLTV Utility Multipurpose Protected Shelter (JUMPS)	4	2021	4	2023
Climate Change - Anti-Idle	3	2022	4	2024
JLTV Electrification Analysis	2	2021	4	2024
JLTV Hybrid Electric Vehicle	2	2024	4	2028
Survivability	2	2023	1	2024
Acoustic Mitigation	2	2023	2	2025
3PMSF Winter Tires	2	2024	2	2025
Competitive Follow-On Contract Award	2	2023	2	2023
Follow-on Contract Live Fire and Survivability Testing	4	2024	1	2025