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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army **Date:** February 2020

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604611A / JAVELIN
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	5.250	14.997	7.493	-	7.493	7.493	7.493	7.493	9.992	0.000	60.211
499: <i>Javelin (AAWS-M)</i>	-	5.250	14.997	7.493	-	7.493	7.493	7.493	7.493	9.992	0.000	60.211

A. Mission Description and Budget Item Justification

Compared to the Block I Command Launch Unit (CLU), the Lightweight CLU will double target identification range and increase system engagement range from 2.5 kilometers (km) to 4 km. Lightweight CLU reduces Soldier burden by providing a minimum of 25% reduction in weight and 30% reduction in size. Javelin Lightweight CLU is a result of user feedback on weight and bulk, and addresses the Close Combat Missile System - Medium Capability Production Document objective system weight requirement.

Fiscal Year (FY) 2021 Base dollars in the amount of \$7.493 million will complete development of the Javelin Lightweight CLU and begin operational test. The Lightweight CLU schedule has been replanned and is on track to complete qualification in FY 2021 and operational test in FY 2022.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	5.616	17.897	7.500	-	7.500
Current President's Budget	5.250	14.997	7.493	-	7.493
Total Adjustments	-0.366	-2.900	-0.007	-	-0.007
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.900			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.366	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.007	-	-0.007

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Army **Date:** February 2020

Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604611A / JAVELIN				Project (Number/Name) 499 / Javelin (AAWS-M)			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
499: Javelin (AAWS-M)	-	5.250	14.997	7.493	-	7.493	7.493	7.493	7.493	9.992	0.000	60.211
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Compared to the Block I Command Launch Unit (CLU), the Lightweight CLU will double target identification range and increase system engagement range from 2.5 kilometers (km) to 4 km. Lightweight CLU reduces Soldier burden by providing a minimum of 25% reduction in weight and 30% reduction in size. Javelin Lightweight CLU is a result of user feedback on weight and bulk, and addresses the Close Combat Missile System - Medium Capability Production Document objective system weight requirement.

Fiscal Year (FY) 2021 Base dollars in the amount of \$7.493 million will complete development of the Javelin Lightweight CLU and begin operational test. The Lightweight CLU schedule has been replanned and is on track to complete qualification in FY 2021 and operational test in FY 2022.

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

	FY 2019	FY 2020	FY 2021
<p>Title: Javelin System Improvements</p> <p>Description: Develop Lightweight Command Launch Unit.</p> <p>FY 2020 Plans: Continued the design/ build of qualification units.</p> <p>FY 2021 Plans: To complete design/build of qualification units. Continue to perform qualification tests to include portability, maintenance and logistics demonstrations. Plan to begin Operational Testing.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: The FY 2020 to FY 2021 decrease of \$7.504 million is due to the completion of Lightweight CLU development in FY 2021.</p>	5.250	14.316	7.493
<p>Title: FY 2020 SBIR/STTR Transfer</p> <p>Description: Funding transferred in accordance with Title 15 USC ?638</p> <p>FY 2020 Plans: Funding transferred in accordance with Title 15 USC ?638</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC ?638</p>	-	0.681	-
Accomplishments/Planned Programs Subtotals	5.250	14.997	7.493

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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604611A / JAVELIN	Project (Number/Name) 499 / Javelin (AAWS-M)
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• H06102: JAVELIN (AAWS-M)	222.985	142.794	165.355	-	165.355	77.703	98.026	152.874	160.177	0.000	1,019.914
• H06103: Javelin Lightweight Command Launch Unit (CLU)	22.500	-	24.970	-	24.970	59.935	69.923	76.323	78.483	0.000	332.134

Remarks

Prior to FY 2021, procurement funds procure missiles and Block I CLU retrofits; FY 2021-2025 procurement funds procure missiles and Lightweight CLUs.

D. Acquisition Strategy

Javelin Lightweight CLU development is Sole Source to the Javelin Joint Venture (Raytheon, Tucson, AZ, and Lockheed Martin, Orlando, FL). A Cost Plus contract with the Javelin Joint Venture will be utilized for Lightweight CLU development efforts. Competition will be used for major sub-assemblies which are the primary cost drivers. The Javelin Joint Venture has invested Independent Research and Development in the Lightweight CLU. Development, prototype, and testing will occur FY 2015-2022 with Low-Rate Initial Production (LRIP) beginning in FY 2021. Army Acquisition Objective (AAO) is 4,979. Current plan is to field to priority Infantry and Stryker Brigade Combat Teams and Special Forces.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Army **Date:** February 2020

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604611A / JAVELIN	Project (Number/Name) 499 / Javelin (AAWS-M)
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Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
System Engineering/ Program Management, Govt	Allot	Multiple : Redstone Arsenal, AL	4.273	-		0.729	Oct 2019	0.212	Jan 2021	-		0.212	0.000	5.214	-
FY 2020 SBIR/STTR Transfer	TBD	Various : Various	-	-		0.681		-		-		-	0.000	0.681	-
Subtotal			4.273	-		1.410		0.212		-		0.212	0.000	5.895	N/A

Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Lightweight CLU Development	SS/CPFF	JJV/Raytheon/ Lockheed Martin : Orlando, FL/ Tucson, AZ	38.209	4.032	May 2019	13.587	Nov 2019	1.236	Jan 2021	-		1.236	0.000	57.064	-
Lightweight CLU Development	MIPR	Redstone Test Center : Redstone Arsenal, AL	0.548	-		-		-		-		-	0.000	0.548	-
Lightweight CLU Trade Studies and Demonstrations	MIPR	AMRDEC : Redstone Arsenal, AL	2.043	-		-		-		-		-	0.000	2.043	-
Subtotal			40.800	4.032		13.587		1.236		-		1.236	0.000	59.655	N/A

Remarks

JJV - Javelin Joint Venture
 SS CPFF - Sole Source Cost Plus Fixed Fee
 CLU - Command Launch Unit
 AMRDEC - Aviation & Missile Research, Development and Engineering Center
 MIPR - Military Interdepartmental Purchase Request

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Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Lightweight CLU Design Verification Testing	SS/CPFF	JJV/Raytheon/ Lockheed Martin : Orlando, FL/Tucson, AZ	1.923	1.218	Mar 2019	-		-		-		-	0.000	3.141	-
Lightweight CLU Design Verification Testing	MIPR	Redstone Test Center : Redstone Arsenal, AL	0.293	-		-		-		-		-	0.000	0.293	-
Lightweight CLU Qualification	SS/CPFF	JJV/Raytheon/ Lockheed Martin : Orlando, FL/Tucson, AZ	-	-		-		4.074	Jan 2021	-		4.074	0.000	4.074	-
Lightweight CLU Qualification	MIPR	Redstone Test Center : Redstone Arsenal, AL	-	-		-		1.048	Jan 2021	-		1.048	0.000	1.048	-
Lightweight CLU Operational Testing	MIPR	Operational Test Command : Ft. Hood, TX	-	-		-		0.923	Jul 2021	-		0.923	0.154	1.077	-
Subtotal			2.216	1.218		-		6.045		-		6.045	0.154	9.633	N/A
Project Cost Totals			47.289	5.250		14.997		7.493		-		7.493	0.154	75.183	N/A

Remarks
Low-Rate Initial Procurement decision will be made upon completion of critical qualification test events but prior to Operational Test.

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Army **Date:** February 2020

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Event Name	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	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
LW CLU Design / Build DVT Units																												
LW CLU Design Verification Testing																												
LW CLU Design Review									▲ 1																			
LW CLU Design / Build Qualification Units																												
LW CLU Qualification Testing																												
LW CLU Operational Testing																												
LW CLU Operational Testing - Desert																					▲ 2							
System Improvements to Meet Emerging Threats																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Army **Date:** February 2020

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604611A / JAVELIN	Project (Number/Name) 499 / Javelin (AAWS-M)
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
LW CLU Design / Build DVT Units	3	2016	4	2019
LW CLU Design Verification Testing	2	2019	1	2020
LW CLU Design Review	1	2020	1	2020
LW CLU Design / Build Qualification Units	1	2020	3	2021
LW CLU Qualification Testing	2	2021	3	2021
LW CLU Operational Testing	4	2021	1	2022
LW CLU Operational Testing - Desert	3	2022	3	2022
System Improvements to Meet Emerging Threats	1	2022	4	2025