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

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 7: Operational Systems Development</i>					<b>R-1 Program Element (Number/Name)</b> PE 0206629M / <i>Amphibious Assault 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
Total Program Element	248.425	7.475	8.246	0.373	-	0.373	0.000	0.000	0.000	0.000	0.000	264.519
2938: <i>Amphibious Assault Vehicle</i>	248.425	7.475	8.246	0.373	-	0.373	0.000	0.000	0.000	0.000	0.000	264.519

**Note**

Prior funding is reflected in PE 0206623M/Project 0021.

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

The Assault Amphibious Vehicle (AAV) program provides life-cycle support to ensure cost-effective combat readiness for the AAV Family of Vehicles (FOV). This is accomplished through engineering changes resulting from continuous review of sub-systems to maintain system supportability, safety, reduce total ownership costs, improve fleet readiness, address obsolescence issues, and improve vehicle performance. The Recovery variant will provide recovery support for the ACV until an ACV Recovery variant is fielded. Improvements to the fleet reduce total ownership costs and improve sustainability. The AAV Modifications Line procures modernized components and subsystems that impact safe and reliable use of the AAV such as the Water Egress Capability (WEC), Tactical Communication Modernization (TCM) to meet NSA's cryptographic modernization mandates, quarterly software refresh of servers and laptops for Command-variant (C-Variant), and associated production support for the AAV FOV. Funding for the AAV FOV is critical to maintaining the amphibious capability of the USMC until the Amphibious Combat Vehicle (ACV) is fully fielded and operational.

In accordance with CMC Force Design, the order and testing of preplanned product improvements for the AAV program has come to an end; the program will continue to support the fleet of AAVs for emerging issues pertaining to design/redesign of parts and components for obsolescence, supportability, and safety issues through system retirement of the AAV-Ps and AAV-Cs in FY 2027 and the AAV-Rs in FY 2029.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	7.551	8.246	6.921	-	6.921
Current President's Budget	7.475	8.246	0.373	-	0.373
Total Adjustments	-0.076	0.000	-6.548	-	-6.548
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.076	0.000			
• Program Adjustments	0.000	0.000	-6.610	-	-6.610

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• Rate/Misc Adjustments	0.000	0.000	0.062	-	0.062
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**Change Summary Explanation**

The decrease from FY 2023 to FY 2024 of \$7.873M is primarily attributed to reduced System Design and Development for AAV modifications, reduced Engineering and Technical Services, and reduced In-house Technical Support as AAVs are retired early from the fleet.

Full funding in FY 2024 supports the programs ability to provide reverse engineering efforts of critical parts shortages prior to system retirement.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2024 Navy **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0206629M / Amphibious Assault Vehicle	<b>Project (Number/Name)</b> 2938 / Amphibious Assault Vehicle
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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
2938: Amphibious Assault Vehicle	248.425	7.475	8.246	0.373	-	0.373	0.000	0.000	0.000	0.000	0.000	264.519
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

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

The Assault Amphibious Vehicle (AAV) program provides life-cycle support to ensure cost-effective combat readiness for the AAV Family of Vehicles (FOV). This is accomplished through engineering changes resulting from continuous review of sub-systems to maintain system supportability, safety, reduce total ownership costs, improve fleet readiness, address obsolescence issues, and improve vehicle performance. The Recovery variant will provide recovery support for the Amphibious Combat Vehicle (ACV) until an ACV Recovery variant is fielded.

In accordance with CMC Force Design, the order and testing of preplanned product improvements for the AAV program has come to an end; the program will continue to support the fleet of AAVs for emerging issues pertaining to design/redesign of parts and components for obsolescence, supportability, and safety issues through system retirement of the AAV-Ps and AAV-Cs in FY 2027 and the AAV-Rs in FY 2029.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<b>Title:</b> Product Development	1.930	2.477	0.373	0.000	0.373
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> This cost element provides funding for design and development engineering for the AAV Modifications Line. The AAV Modifications Line provides Nonrecurring Engineering (NRE) and design for AAV safety, obsolescence, and performance improvement engineering for the AAV Family of Vehicles (FOV).					
<b>FY 2023 Plans:</b>					
-Complete legacy Platform Command and Control (C2) design and integration efforts to include AAV-C software production kits, Cyber Security initiatives, Intercom and TCM Integration, and firmware updates at reduced levels as the C2 requirement transitions from the AAV program to the ACV program as a result of AAVs retiring from the fleet.					
-Continue reverse engineering efforts of critical parts shortages prior to system retirement.					
<b>FY 2024 Base Plans:</b>					
-Continue reverse engineering efforts of critical parts shortages prior to system retirement.					
<b>FY 2024 OCO Plans:</b>					



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2024 Navy			<b>Date:</b> March 2023		
<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0206629M / <i>Amphibious Assault Vehicle</i>	<b>Project (Number/Name)</b> 2938 / <i>Amphibious Assault Vehicle</i>			

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
N/A					
<b>Title:</b> Management and Engineering Technical Services  <b>Articles:</b>  <b>Description:</b> Contract Management Support Services (MSS) and Engineering and Technical Services (ETS) for program office and field activities.  <b>FY 2023 Plans:</b> -Complete support of ECP development, trade studies and analyses, supply chain, and government property management in support of AAV sustainment modification efforts. -Continue logistic support for systems integration efforts.  <b>FY 2024 Base Plans:</b> N/A  <b>FY 2024 OCO Plans:</b> N/A  <b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The decrease in Engineering and Technical Services from FY 2023 to FY 2024 is a result of the programs technical support requirement ending in FY 2023.	1.824	1.686	0.000	0.000	0.000
	-	-	-	-	-
<b>Accomplishments/Planned Programs Subtotals</b>	7.475	8.246	0.373	0.000	0.373

<b>C. Other Program Funding Summary (\$ in Millions)</b>										
<b>Line Item</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete Total Cost</b>
• PMC/2021: AAV Product Improvement Program	20.105	5.653	3.353	-	3.353	2.750	0.006	0.006	0.006	Continuing Continuing

**Remarks**

**D. Acquisition Strategy**

The AAV Modifications Line includes government and contractor life-cycle support to ensure cost-effective combat readiness for the AAV Family of Vehicles (FOV). This is accomplished through continuous review of sub-systems to maintain system supportability and safety, procurement of replacement systems for obsolescence, and fielding of Engineering Change Proposals (ECP). The improvements to the fleet reduce total ownership costs and improve sustainability. The AAV Modifications Line procures modernized components and subsystems that impact safe and reliable use of the AAV such as Tactical Communication Modernization (TCM) to meet NSA's

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**Exhibit R-2A, RDT&E Project Justification:** PB 2024 Navy **Date:** March 2023

<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>	<b>Project (Number/Name)</b>
1319 / 7	PE 0206629M / <i>Amphibious Assault Vehicle</i>	2938 / <i>Amphibious Assault Vehicle</i>

cryptographic modernization mandates, quarterly software refresh of servers and laptops for Command-variant (C-Variant), and associated production support for the AAV FOV. The AAV-Ps and AAV-Cs are expected to continue to be in service until 2027 and the AAV-Rs through FY 2029 as the system is replaced by the ACV.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0206629M / Amphibious Assault Vehicle	<b>Project (Number/Name)</b> 2938 / Amphibious Assault Vehicle
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<b>Product Development (\$ in Millions)</b>				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			
Syst Design & Dev / EMD	C/FFP	MCSC/SAIC : Charleston, SC	138.072	0.000		0.000		0.000		-		0.000	0.000	138.072	-
Syst Design & Dev	C/FFP	Various : Various	13.008	1.930	Feb 2022	2.477	Feb 2023	0.373	Feb 2024	-		0.373	0.000	17.788	-
Other Product Development	C/BA	Various : Various	6.514	0.000		0.000		0.000		-		0.000	0.000	6.514	-
<b>Subtotal</b>			157.594	1.930		2.477		0.373		-		0.373	0.000	162.374	N/A

**Remarks**  
The decrease in System Design and Development from FY 2023 to FY 2024 is attributed to a reduced requirement for AAV modifications design and development activities as AAVs are retired from the fleet.

<b>Support (\$ in Millions)</b>				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			
In-House Technical Support	Various	Various : Various	28.842	2.674	Feb 2022	4.083	Feb 2023	0.000		-		0.000	0.000	35.599	-
Program Management Support	Various	Various : Various	0.000	0.000	Feb 2022	0.000		0.000		-		0.000	0.000	0.000	-
Travel	Various	Various : Various	1.251	0.000		0.000		0.000		-		0.000	0.000	1.251	-
<b>Subtotal</b>			30.093	2.674		4.083		0.000		-		0.000	0.000	36.850	N/A

**Remarks**  
The decrease in In-House Technical Support from FY 2023 to FY 2024 is a result of the program's support requirement ending in FY 2023.

<b>Test and Evaluation (\$ in Millions)</b>				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			
Developmental Test & Evaluation (DT&E)	Various	Various : Various	18.490	1.047	Apr 2022	0.000		0.000		-		0.000	0.000	19.537	-
Operational Test & Evaluation (OT&E)	WR	MCOTE A : Quantico, VA	1.022	0.000		0.000		0.000		-		0.000	0.000	1.022	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0206629M / Amphibious Assault Vehicle	<b>Project (Number/Name)</b> 2938 / Amphibious Assault Vehicle
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<b>Test and Evaluation (\$ in Millions)</b>				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			
Live Fire Test & Evaluation (LFT&E)	Various	Various : Various	8.639	0.000		0.000		0.000		-		0.000	0.000	8.639	-
<b>Subtotal</b>			28.151	1.047		0.000		0.000		-		0.000	0.000	29.198	N/A

<b>Management Services (\$ in Millions)</b>				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			
Engineering and Technical Services	Various	Various : Various	18.615	1.824	Mar 2022	1.686	Mar 2023	0.000		-		0.000	0.000	22.125	-
Management Support Svcs	C/FFP	MCSC : Quantico, VA	13.972	0.000		0.000		0.000		-		0.000	0.000	13.972	-
<b>Subtotal</b>			32.587	1.824		1.686		0.000		-		0.000	0.000	36.097	N/A

**Remarks**  
The decrease in Engineering and Technical Services from FY 2023 to FY 2024 is a result of the program's technical support requirement ending in FY 2023.

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	248.425	7.475	8.246	0.373	-	0.373	0.000	264.519	N/A

**Remarks**

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy Date: March 2023

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0206629M / Amphibious Assault Vehicle	<b>Project (Number/Name)</b> 2938 / Amphibious Assault Vehicle
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<b>AAV MODIFICATIONS PB-24 PROGRAM SCHEDULE</b>																																																					
		FY 22				FY 23				FY 24				FY 25				FY 26				FY 27				FY 28																											
FISCAL YEAR		1				2				3				4				1				2				3				4																							
Quarter		O N D J				F M A M J				J A S O N D				J F M A M J				J A S O N D				J F M A M J				J A S O N D				J F M A M J				J A S O N D				J F M A M J				J A S O N D				J F M A M J				J A S O N D			
<b>Intercom System (ICS) Modernization</b>	Total	451																																																			
	P	376																																																			
	C	40																																																			
	R	35																																																			
<b>Tactical Communications Modernization (TCM)</b>	Total	305																																																			
	P	262																																																			
	C	18																																																			
	R	25																																																			
<b>Emergency Egress Lighting System (EELS) Vehicle Power Modernization (VPM)</b>	Total	389																																																			
	P	322																																																			
	C	35																																																			
	R	32																																																			
<b>Assured Position, Navigation, and Timing (A-PNT)</b>	Total	64																																																			
	P	52																																																			
	C	12																																																			
	R	0																																																			

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**Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy** **Date:** March 2023

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0206629M / <i>Amphibious Assault Vehicle</i>	<b>Project (Number/Name)</b> 2938 / <i>Amphibious Assault Vehicle</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Proj 2938</i></b>				
TCM - ECP Approval	3	2022	3	2022