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

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0204413N / <i>Amphibious Tactical Supt Units</i>
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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
Total Program Element	35.667	1.650	1.789	1.991	-	1.991	2.264	2.056	1.917	1.956	Continuing	Continuing
2231: <i>LCAC / LCU 1700</i>	35.189	1.153	1.279	1.471	-	1.471	1.742	1.523	1.373	1.401	Continuing	Continuing
2477: <i>NECC Additive Manufacturing</i>	0.478	0.497	0.510	0.520	-	0.520	0.522	0.533	0.544	0.555	Continuing	Continuing

A. Mission Description and Budget Item Justification

Landing Craft, Air Cushion (LCAC): Research and development efforts to transfer technologies into functional uses on the current LCACs. Current technology initiatives include sustainability/reliability/readiness/performance analyses, LCAC communication improvements, compliance with Cybersecurity policy regulations, and LCAC Total Ownership Costs (TOC) reduction initiatives.

Landing Craft, Utility (LCU 1700): Replacement program for the current LCU 1610 class craft - a class of craft that has exceeded its 25-year planned service life by nearly double, average age of craft is approaching 50-years-old. LCU 1700 will provide similar payload, range, speed, and interoperability. Detail design contract awarded Q2 FY18.

The Amphibious Support Craft Vehicle (ASCV) which will be the Lighter Amphibious Resupply Cargo, 5 ton (LARC-V) Replacement, provides amphibious equipment and personnel transport as well as near shore salvage and diving capability.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	1.657	1.789	2.200	-	2.200
Current President's Budget	1.650	1.789	1.991	-	1.991
Total Adjustments	-0.007	0.000	-0.209	-	-0.209
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.007	0.000			
• Program Adjustments	0.000	0.000	-0.243	-	-0.243
• Rate/Misc Adjustments	0.000	0.000	0.034	-	0.034

Change Summary Explanation

Due to LCU 1700 Construction delays, LCU 1700 Integrated Developmental/Operational Testing is expected to be completed 2nd quarter of 2025.

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

Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204413N / <i>Amphibious Tactical Supt Units</i>	Project (Number/Name) 2231 / LCAC / LCU 1700
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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
2231: LCAC / LCU 1700	35.189	1.153	1.279	1.471	-	1.471	1.742	1.523	1.373	1.401	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Landing Craft, Air Cushion (LCAC): Research and development efforts to transfer technologies into functional uses on the current LCACs. Ongoing technology initiatives include sustainability/reliability/readiness/performance analyses, LCAC communication improvements, Cybersecurity policy regulations compliance, and LCAC Total Ownership Costs (TOC) reduction initiatives.

Landing Craft, Utility (LCU 1700): Replacement program for the current LCU 1610 class craft - a class of craft that has exceeded its 25-year planned service life by nearly double, average age of craft is approaching 50-years-old. LCU 1700 will provide similar payload, range, speed, and interoperability. Detail design contract awarded Q2 FY18.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: LCAC and LCU 1700 RDT&E,N	1.153	1.279	1.471	0.000	1.471
Articles:	-	-	-	-	-
FY 2023 Plans:					
LCAC:					
- Continue to improve reliability and maintainability of the LCAC Hull, Mechanical & Electrical (HM&E) systems.					
- Maintain compliance with cybersecurity directives and mandates.					
LCU:					
- Conduct risk reduction efforts, which support Life Cycle/Total Ownership Cost (TOC) reductions for the class.					
- Conduct and Support Developmental Testing & Operational Testing (DT/OT).					
FY 2024 Base Plans:					
LCAC:					
- Continue to improve reliability and maintainability of the LCAC Hull, Mechanical & Electrical (HM&E) systems.					
- Maintain compliance with cybersecurity directives and mandates.					
LCU:					
- Continue risk reduction efforts, which support Life Cycle/Total Ownership Cost (TOC) reductions for the class.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204413N / <i>Amphibious Tactical Supt Units</i>	Project (Number/Name) 2231 / LCAC / LCU 1700

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
- Continue Developmental Testing & Operational Testing (DT/OT).					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Increase to support the delivery and start of initial testing in August of FY23.					
Accomplishments/Planned Programs Subtotals	1.153	1.279	1.471	0.000	1.471

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPN 0970: LCAC	21.314	17.452	10.794	-	10.794	18.253	19.902	20.292	20.730	0.000	266.622
• SCN 5139: LCAC SLEP	17.712	36.301	15.286	-	15.286	55.147	56.153	57.274	58.511	0.000	1,771.250
• SCN 5100: LCU 1700	79.744	0.000	62.532	-	62.532	45.164	48.481	48.534	50.034	122.212	703.234

Remarks

D. Acquisition Strategy

Multiple contracts and Field Activities are involved to complete the various projects.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy												Date: March 2023				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
1319 / 7				PE 0204413N / Amphibious Tactical Supt Units				2231 / LCAC / LCU 1700								
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	
LCAC - Systems Engineering	WR	NSWC : Various	8.117	0.184	Jan 2022	0.200	Jan 2023	0.200	Jan 2024	-		0.200	Continuing	Continuing	Continuing	
LCU - Ship Design	WR	NSWC : Various	18.995	0.061	Dec 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing	
Subtotal			27.112	0.245		0.200		0.200		-		0.200	Continuing	Continuing	N/A	
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	
LCU - Research Studies	Various	Various : Various	0.656	0.125	Dec 2021	0.125	Dec 2022	0.130	Dec 2023	-		0.130	0.000	1.036	-	
Subtotal			0.656	0.125		0.125		0.130		-		0.130	0.000	1.036	N/A	
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	WR	Various : Various	0.287	0.000		0.000		0.000		-		0.000	0.000	0.287	-	
Prior Year Operational Test & Evaluation Not Funded FYDP (PYOT&E)	WR	NSWC PCD : Panama City, FL	2.047	0.000		0.000		0.000		-		0.000	0.000	2.047	-	
Prior Year Live Fire Test & Evaluation Not Funded FYDP (PYLFT&E)	WR	NSWC PCD : Panama City, FL	0.850	0.000		0.000		0.000		-		0.000	0.000	0.850	-	
Developmental Test & Evaluation (DT&E)	WR	Various : Various	1.162	0.396	Dec 2021	0.404	Nov 2022	0.625	Dec 2023	-		0.625	Continuing	Continuing	Continuing	
Operational Test & Evaluation (OT&E)	WR	Various : Various	0.781	0.250	Nov 2021	0.514	Nov 2022	0.257	Jun 2024	-		0.257	Continuing	Continuing	Continuing	
Subtotal			5.127	0.646		0.918		0.882		-		0.882	Continuing	Continuing	N/A	

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

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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			
Engineering Support	WR	Various : Various	0.816	0.071	Jan 2022	0.013	Jan 2023	0.100	Mar 2024	-		0.100	0.000	1.000	-
Program Management	WR	Various : Various	1.403	0.066	Nov 2021	0.023	Nov 2022	0.159	Mar 2024	-		0.159	0.000	1.651	-
Travel	WR	NAVSEA : Not Specified	0.064	0.000		0.000		0.000		-		0.000	0.000	0.064	-
Defense Acquisition Workforce	MIPR	OSD : Not Specified	0.011	0.000		0.000		0.000		-		0.000	0.000	0.011	-
Subtotal			2.294	0.137		0.036		0.259		-		0.259	0.000	2.726	N/A

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		35.189	1.153	1.279	1.471	-	1.471	Continuing	Continuing	N/A

Remarks
 FY24 increase of LCU 1700 RDT&E funding is due to LCU 1700 Integrated Developmental/Operational Testing events taking longer than originally scheduled due to delays at the shipbuilder.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204413N / <i>Amphibious Tactical Supt Units</i>	Project (Number/Name) 2231 / LCAC / LCU 1700

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2231				
LCAC - Technology Initiatives	1	2022	4	2027
LCU 1700 - Integrated Developmental / Operational Testing	1	2022	2	2025
LCU 1700 - Sustainment Technology Initiatives	2	2022	4	2027

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0204413N / <i>Amphibious Tactical Supt Units</i>				Project (Number/Name) 2477 / <i>NECC Additive Manufacturing</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
2477: <i>NECC Additive Manufacturing</i>	0.478	0.497	0.510	0.520	-	0.520	0.522	0.533	0.544	0.555	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In accordance with the National Defense Strategy (NDS), A Design for Maintaining Maritime Superiority 2.0, and Navy Facility Command (NAVFAC) Strategic Design 2.0, this program provides the Navy with new capabilities to enable resilient and agile logistics thru additive manufacturing (AM). Investing in AM enhances the fleet's ability to conduct operational logistics in a contested environment, and ensures logistics supportability across the austere distributed battlespace. AM technology results in increased operational availability, on demand production of critical systems, and supply chain cost savings. This effort will identify critical parts suitable for AM production in the field; identify AM systems appropriate to produce and certify critical parts in the field; analyze and identify AM system implications across doctrine, organization, training, materiel, leadership and education, personnel, facilities and policy (DOTMLPF-P); conduct end-user training, field experimentation, and fleet exercise technology insertion to validate AM system capability and systems integration issues.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: NECC Additive Manufacturing	0.497	0.510	0.520	0.000	0.520
Articles:	-	-	-	-	-
FY 2023 Plans:					
- Begin development of Universal Facility Criteria for Additive Manufacturing (AM)Construction; complete Navy Expeditionary Combat Force (NECF)AM IT systems Authority to Operate (ATO); complete Navy Expeditionary Combat Enterprise (NECE) file repository; complete NAVFAC AM Policy development; perform a Business Case Analysis of AM in Expeditionary Maintenance Centers; evaluate 3D printers and support systems as noted in NECE AM Analysis of Alternatives (AoA) to determine military utility and suitability for initially fielding technology; continue other developmental efforts as noted in FY22.					
FY 2024 Base Plans:					
- Continue development of Universal Facility Criteria for AM Construction; modify Navy Expeditionary Combat Force (NECF) AM IT systems Authority to Operate (ATO) as required to adapt to any FY24 system configuration changes; implement NECC NIPR file repository and evaluate system military utility; modify NAVFAC AM Policy as required to adapt to ATO and data repository assessments; evaluate 3D printers and support systems as					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
noted in Navy Expeditionary Combat Enterprise (NECE) AM Analysis of Alternatives (AoA) to determine military utility and suitability for technology refresh; continue other developmental efforts as noted in FY23. FY 2024 OCO Plans: N/A FY 2023 to FY 2024 Increase/Decrease Statement: Increase of 0.01M will be applied to modifications to Additive Manufacturing Information Technology (AM IT) to operate.					
Accomplishments/Planned Programs Subtotals	0.497	0.510	0.520	0.000	0.520

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

N/A

Remarks

D. Acquisition Strategy

The projects identified in this budget have been carefully selected to respond to a series of extended user evaluations of commercial off the shelf (COTS) equipment by the warfighter with the goal of developing requirements for future additive manufacturing capabilities that will meet unique logistics alternatives. This effort will be executed by members of the expeditionary programs office in collaboration with various naval warfare centers and partners in the expeditionary additive manufacturing community of practice, and in conjunction with end users at the appropriate Type Commands. By working through the previously described sequence of analysis and experimental validation, we will identify the appropriate systems for in-field additive manufacturing while simultaneously informing end-user requirements development and program office acquisition plans..

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

Proj 2477	
Operational Evaluation	
Test Plan and Analysis	

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

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 2477				
Operational Evaluation	1	2022	4	2028
Test Plan and Analysis	1	2022	4	2028