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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy **Date:** March 2024

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604212M / <i>Other Helicopter Development</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	101.209	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	101.209
3406: <i>Attack and Utility Replacement Aircraft</i>	0.000	0.000	101.209	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	101.209

Note

Funds decrease from FY 2024 to FY 2025 due to transfer of effort from PE 0604212M to PE 0604295M beginning in FY 2025.

A. Mission Description and Budget Item Justification

This Program Element includes funding for the development of USMC Vertical Take-Off and Landing (VTOL) Family of Systems (FoS) capability. VTOL FoS is a USMC initiative to address vertical lift capability requirements and determine feasible and affordable solutions in support of the Warfighter. This PE will include development and prototype efforts developed to progress high-risk technology areas in support of future Marine capabilities.

B. Program Change Summary (\$ in Millions)

	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025 Base</u>	<u>FY 2025 OCO</u>	<u>FY 2025 Total</u>
Previous President's Budget	0.000	101.209	136.218	-	136.218
Current President's Budget	0.000	101.209	0.000	-	0.000
Total Adjustments	0.000	0.000	-136.218	-	-136.218
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	-136.218	-	-136.218

Change Summary Explanation

Cost: FY 2025 funding request reduced due to transfer of effort from PE 0604212M to PE 0604295M beginning in FY 2025.

Technical: Not applicable.

Schedule: FY23 activities shown on the R4 & R4A were funded in 0604212N. Beginning in 1Q FY 2024, schedule reflects a Middle Tier of Acquisition approach.

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy										Date: March 2024		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604212M / <i>Other Helicopter Development</i>					Project (Number/Name) 3406 / <i>Attack and Utility Replacement Aircraft</i>		
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
3406: <i>Attack and Utility Replacement Aircraft</i>	0.000	0.000	101.209	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	101.209
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

USMC Vertical Take-Off and Landing (VTOL) Family of Systems (FoS) is a United States Marine Corps (USMC) Future Vertical Lift (FVL) initiative addressing vertical lift capability requirements that are feasible and affordable in support of the USMC Warfighter. This is a supporting element of the USMC's Force Design 2030 guidance. USMC VTOL FoS will facilitate developmental and operational prototyping and demonstration of capabilities in alignment with co-developed mission focused areas supporting Assault/Support, Attack/Strike, and Aviation Sustainment. USMC VTOL FoS will continue the transition of science and technology efforts into meaningful Warfighter capability, which includes OSD Joint Capability Technology Demonstration (JCTD) and Rapid Defense Experiment Reserve (RDER) projects such as Long Range Attack Missile (LRAM) and Penetrating Affordable Autonomous Collaborative Killer- Portfolio (PAACK-P). The USMC VTOL FoS is closely aligned with the OSD-sponsored FVL FoS initiative and will look to leverage any aspects of the Joint Service programs that may benefit the USMC through accelerated development and/or reduced life cycle costs. USMC VTOL FoS will be a force multiplier with superior performance, payload, survivability, agility, endurance, and reliability that enables warfighters to win in a future dynamic battlespace. USMC VTOL FoS will increase the Marine Air Ground Task Force's (MAGTF) capacity for long-range fires, Assault/Support, Attack/Strike, and Aviation Sustainment through the development of capabilities such as a logistics connector. This directly supports and enables Force Design 2030 by enabling the support of the Stand-in Force (SiF), Expeditionary Advanced Basing Operations (EABO), and Littoral Operations in a Contested Environment (LOCE).

USMC VTOL FoS will utilize Doctrine, Organization, Training, Material, Leadership and Education, Personnel, and Facilities and Policy (DOTmLPF-P) analyses that will include all facets of a program with particular focus on life-cycle cost reductions through common processes, support equipment, logistic support and component commonality utilizing non-materiel solutions, such as maintenance strategies, training solutions, and infrastructure requirements. Air vehicle capabilities will include primary mechanical, electrical, pneumatic, and structural components such as drivetrain, generators, landing gear, hydraulics, controls, seats, etc. The mission subsystems will include all on and off-board components with embedded control software for those components that provide all mission functionality, cockpit displays, cockpit hardware subsystem controllers and interfaces. The architecture will include the fundamental organization of the complete system, the processing method/component(s), the platform software, the operating environment, and the on-aircraft infrastructure to facilitate integration of all subsystems and platform.

JUSTIFICATION FOR BUDGET ACTIVITY: This program element is funded for Advanced Component Development & Prototype activities, including conducting prototyping and system demonstration tasks aimed at validating requirements.

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

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Attack and Utility Replacement Aircraft	0.000	101.209	0.000	0.000	0.000

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Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604212M / <i>Other Helicopter Development</i>	Project (Number/Name) 3406 / <i>Attack and Utility Replacement Aircraft</i>

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

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Articles:	-	-	-	-	-
<p><i>FY 2024 Plans:</i> Tasks to be performed may include: Acquisition Program Management functions, Acquisition Documentation, Engineering modeling and analysis, Test and Evaluation planning and development, a Model Based System Specification, continued Concept Development and Technology Maturation (CDTM) efforts in critical high-risk technology areas, culminating in design trade studies and prototyping on associated systems. CDTM efforts will include studies, virtual simulation, conceptual design, prototyping of VTOL FoS Air Vehicles and all associated Avionics, Propulsion and Dynamics, Communications and Navigation, Weapons and Fire Control, Missile and Associated Payloads, Human Systems Integration, Survivability and Vulnerability, Missions and Missions Systems Management, Reliability and Maintainability, Training, Logistics, Sensor, Pilotage and Targeting Systems, Flight Control, Integrated Digital Environment Development, Digital Engineering, Autonomy, Crewed/ Uncrewed Systems, and Software/Hardware architecture.</p> <p>Continue advancing technologies in the area of Modular Open Systems Approach (MOSA) to systems architectures via MOSA OTA. Analytical rigor will be provided by planned VTOL FoS efforts to integrate within the USN's Navy Capabilities-Based Assessments Integration Process (NCIP) and the USMC's NCIP-Marine Corps processes, as well as continued cross-service collaboration efforts with the Army and Air Force. Joint All-Domain Operations (JADO) requirements, informed by multi-service efforts including the Joint Capability Technology Demonstration (JCTD) Long Range Attack Missile (LRAM) and the Rapid Defense Experimentation Fund (RDER) Penetrating Affordable Autonomous Collaborative Killer- Portfolio (PAACK-P) will be integrated with the Weapons OTA within VTOL FoS established laboratory infrastructure. Efforts will include working with transition partners across the Services to ensure effective investment strategies resulting in capability delivered to the Warfighter. The areas of concentration include: Survivability, Sensors, Weapons, Mission Systems, EW packages, and Air Vehicle high-risk technology areas.</p> <p><i>FY 2025 Base Plans:</i> N/A</p> <p><i>FY 2025 OCO Plans:</i> N/A</p> <p><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></p>					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Funds decrease from FY 2024 to FY 2025 due to transfer of effort from PE 0604212M to PE 0604295M beginning in FY 2025.					
Accomplishments/Planned Programs Subtotals	0.000	101.209	0.000	0.000	0.000

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

N/A

Remarks

D. Acquisition Strategy

The Analysis of Alternatives (AoA) was initiated in 3QFY2017 to begin the assessment of the technical feasibility, operational feasibility, technical risk, and affordability of potential solutions. The AoA was completed in FY2019 resulting in OSD Sufficiency. In FY 2021, acquisition and requirements documentation refinement continued. MBSE BAAs awarded and execution progressed, allowing the Program to gain insight alongside Industry in implementing Digital Engineering for systems design. In FY 2022, requirements analysis and document generation continued and multiple MOSA OTAs were awarded. In FY 2023, MOSA OTA execution continued, multiple Weapons Integration Risk Reduction (WIRR) OTA awards occurred, a VTOL FoS ICD was routed for MROC approval, and concept development and technology maturation efforts continued. The accumulation of prior year risk reductions allowed for the Program to justify a Middle Tier of Acquisition (MTA) approach, with a Rapid Prototyping phase entry in FY 2024. In FY 2024, a major Rapid Prototyping demonstration contract will award that will result in the demonstration of multiple platforms from FY 2024 through FY 2026, leading into follow-on integration and development efforts for platforms that satisfy USMC requirements. In FY 2026, major integration and system development efforts will continue and inform Rapid Fielding phase entry for the Aerial Logistics Connector in FY 2028. This program includes Science and Technology (S&T) transition activities to the Program of Record.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy											Date: March 2024				
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604212M / Other Helicopter Development					Project (Number/Name) 3406 / Attack and Utility Replacement Aircraft				

Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
Industry Technology Collaboration	C/CPFF	Various : Various	0.000	0.000		25.525	Dec 2023	0.000		-		0.000	0.000	25.525	-
Joint All Domain Operations (JADO)/TAC Demo	C/CPFF	Various : Various	0.000	0.000		17.462	Nov 2023	0.000		-		0.000	0.000	17.462	-
Concept Development and Technology Maturation (CDTM)	C/CPFF	Various : Various	0.000	0.000		38.344	Dec 2023	0.000		-		0.000	0.000	38.344	-
Subtotal			0.000	0.000		81.331		0.000		-		0.000	0.000	81.331	N/A

Remarks
Funds decrease from FY 2024 to FY 2025 due to transfer of effort from PE 0604212M to PE 0604295M beginning in FY 2025.

Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
Development Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		10.545	Nov 2023	0.000		-		0.000	0.000	10.545	-
Development Support	WR	Various : Various	0.000	0.000		5.054	Dec 2023	0.000		-		0.000	0.000	5.054	-
Subtotal			0.000	0.000		15.599		0.000		-		0.000	0.000	15.599	N/A

Remarks
Funds decrease from FY 2024 to FY 2025 due to transfer of effort from PE 0604212M to PE 0604295M beginning in FY 2025.

Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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)	WR	Various : Various	0.000	0.000		0.871	Nov 2023	0.000		-		0.000	0.000	0.871	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy **Date:** March 2024

Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604212M / Other Helicopter Development	Project (Number/Name) 3406 / Attack and Utility Replacement Aircraft
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Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
Operational Test & Evaluation (OT&E)	C/CPFF	Various : Various	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Subtotal			0.000	0.000		0.871		0.000		-		0.000	0.000	0.871	N/A

Remarks
Funds decrease from FY 2024 to FY 2025 due to transfer of effort from PE 0604212M to PE 0604295M beginning in FY 2025.

Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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			
Contractor Engineering Support	C/CPIF	Various : Various	0.000	0.000		0.871	Nov 2023	0.000		-		0.000	0.000	0.871	-
Program Management Support	WR	Various : Various	0.000	0.000		2.450	Nov 2023	0.000		-		0.000	0.000	2.450	-
Travel	C/BA	NAVAIR : Patuxent River, MD	0.000	0.000		0.087	Oct 2023	0.000		-		0.000	0.000	0.087	-
Subtotal			0.000	0.000		3.408		0.000		-		0.000	0.000	3.408	N/A

Remarks
Funds decrease from FY 2024 to FY 2025 due to transfer of effort from PE 0604212M to PE 0604295M beginning in FY 2025.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	101.209	0.000	-	0.000	0.000	101.209	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Navy																						Date: March 2024			
Appropriation/Budget Activity 1319 / 5												R-1 Program Element (Number/Name) PE 0604212M / Other Helicopter Development						Project (Number/Name) 3406 / Attack and Utility Replacement Aircraft							

CY	22				2023				2024				2025				2026				2027				2028				2029			
	FY	FY23				FY24				FY25				FY26				FY27				FY28				FY29						
		QTR	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Logistics Connector MTA Rapid Prototype	Mission Effectiveness Modeling / Analysis																															
					★ ADM Operational Demo								Mission System Integration																			
					ADM DT&E																											
	MOSA OTA Prototype Integration																															
Logistics Connector MTA Rapid Fielding																									★ ADM				Rapid Fielding			
																									Briefing Contracting				Test / Demo			
																													Production			
TACAIR	RDER PAACK-P 1.0																															
													RDER PAACK-P 2.0																			
Attack / Strike CDTM	JCTD LRAM																															
													Weapons Integration Risk Reduction OTA																			
Assault Support CDTM	Additive Manufacturing Propulsion Risk Reduction																															

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604212M / <i>Other Helicopter Development</i>	Project (Number/Name) 3406 / <i>Attack and Utility Replacement Aircraft</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Vertical Take Off and Landing Family of Systems				
Logistics Connector MTA Rapid Prototype: Mission Effectiveness Modeling/Analysis: Mission Effectiveness Modeling/Analysis	3	2023	1	2025
Logistics Connector MTA Rapid Prototype: Operational Demo: Operational Demo	2	2024	2	2026
Logistics Connector MTA Rapid Prototype: Mission Systems Integration: Mission Systems Integration	3	2026	2	2028
Logistics Connector MTA Rapid Prototype: DT&E: DT&E	2	2024	2	2028
Logistics Connector MTA Rapid Prototype: MOSA OTA Prototype Integration: MOSA OTA Prototype Integration	1	2023	4	2025
Logistics Connector MTA Rapid Fielding: Breifing: Breifing	4	2027	2	2028
Logistics Connector MTA Rapid Fielding: Contracting: Contracting	3	2028	4	2028
Logistics Connector MTA Rapid Fielding: Rapid Fielding: Rapid Fielding	1	2029	4	2029
Logistics Connector MTA Rapid Fielding: Test/Demo: Test/Demo	1	2029	4	2029
Logistics Connector MTA Rapid Fielding: Production: Production	1	2029	4	2029
TACAIR: RDER PAACK-P 1.0: RDER PAACK-P 1.0	1	2023	4	2025
TACAIR: RDER PAACK-P 2.0: RDER PAACK-P 2.0	1	2024	4	2026
Attack/Strike CDTM: JCTD LRAM: JCTD LRAM	1	2023	4	2025
Attack/Strike CDTM: Weapons Integration Risk Reduction OTA: Weapons Integration Risk Reduction OTA	4	2023	4	2025
Assault Support CDTM: Additive Manufacturing Propulsion Risk Reduction: Additive Manufacturing Propulsion Risk Reduction	3	2023	3	2025