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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 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604292N / <i>FUTURE VERTICAL LIFT (MARITIME STRIKE)</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	5.038	8.269	5.103	2.100	-	2.100	0.000	0.000	0.000	0.000	0.000	20.510
2940: <i>Future Vertical Lift (Maritime Strike)</i>	5.038	8.269	5.103	2.100	-	2.100	0.000	0.000	0.000	0.000	0.000	20.510

A. Mission Description and Budget Item Justification

Future Vertical Lift (Maritime Strike) (FVL (MS)) directs a Naval Aviation initiative to close key warfighting gaps and recapitalize capabilities lost when legacy rotary wing platforms (MH-60R, MH-60S, and MQ-8C) reach service-life limits beginning in the late 2020s. The FVL (MS) program will develop and field more capable, maintainable and reliable crewed and uncrewed rotorcraft systems to meet the needs of the Navy. FVL (MS) will be a key component of Distributed Maritime Operations (DMO) which will add warfighting capabilities in long-range Intelligence, Surveillance, Reconnaissance, and Targeting (ISR&T), Surface Warfare, Undersea Warfare (Anti-Submarine Warfare and Mine Warfare), Air Warfare, Electronic Warfare, Naval Special Warfare, Personnel Recovery, Patient Movement, Humanitarian Assistance/ Disaster Relief and Combat Logistics. The activities conducted under this program will contribute to the acquisition documentation required to support a Milestone A (MS-A) decision and enable Technology Maturation and Risk Reduction (TMRR) key activities. These efforts will enable timely development of a system that provides best value and capability to the warfighter while maintaining effective and efficient war fighting capability in support of the Navy's 30-year Aviation Plan.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	8.274	5.103	0.000	-	0.000
Current President's Budget	8.269	5.103	2.100	-	2.100
Total Adjustments	-0.005	0.000	2.100	-	2.100
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.005	0.000			
• Program Adjustments	0.000	0.000	2.100	-	2.100

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<u>Change Summary Explanation</u> Cost: FY 2024 funding request is increased since the previous President's Budget submission, \$2.100 million for Future Vertical Lift (Maritime Strike) Post Analysis of Alternatives (AoA) activities. Technical: Not applicable. Schedule: Not applicable.		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0604292N / <i>FUTURE VERTICAL LIFT (MARITIME STRIKE)</i>				Project (Number/Name) 2940 / <i>Future Vertical Lift (Maritime Strike)</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
2940: <i>Future Vertical Lift (Maritime Strike)</i>	5.038	8.269	5.103	2.100	-	2.100	0.000	0.000	0.000	0.000	0.000	20.510
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Future Vertical Lift (Maritime Strike)(FVL (MS)) project directs developmental activities in support of the replacement of the current inventory of Navy helicopters in the 2030+ timeframe. Specific development activities required for FVL (MS) may include: capability requirements definition, documentation, and validation; Analysis of Alternatives (AoA) planning and execution including AoA Study Guidance and Study Plan preparation); completion of affordability studies; establishment of the appropriate security environment (e.g. computers, facilities, and administration); production of an Acquisition Strategy (AS), Life Cycle Cost Estimate (LCCE), Life Cycle Sustainment Plan (LCSP), Systems Engineering Plan (SEP), and Draft Capability Development Document (CDD); Request for Proposal (RFP) development: acquisition documentation; risk reduction initiatives; design trade studies; and support to joint FVL, including open hardware and software reference and objective architectures definition, mission system interoperability, and shipboard compatibility. Follow-on activities support preparation and execution of efforts to develop common systems reference and objective open architectures, and eventual prototype aircraft flight demonstrations in support of the FVL Technology Maturation and Risk Reduction (TMRR) acquisition phase. Activities and technologies developed also have the potential to be leveraged for sustainment of legacy Navy helicopters. These efforts will enable timely development of a system that provides best value and capability to the Joint Warfighter while maintaining effective and efficient war fighting capability in support of the Navy's 30 year Aviation Plan.

FY 2024 budget funds the FVL (MS) post-AoA follow-on activities to include analyses, studies and development of acquisition documentation. Tasks to be performed may include post-AoA support, acquisition program management functions, engineering modeling and analysis, conceptual design trade studies, and other related follow on activities.

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

	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: FVL (MS) Requirements Definition and Acquisition Documentation	8.269	5.103	2.100	0.000	2.100
Articles:	-	-	-	-	-
FY 2023 Plans:					
Post-AoA follow-on activities to include analyses, studies and production of acquisition documentation. Tasks to be performed may include post-AoA support, acquisition program management functions, engineering modeling and analysis, system specification and Draft CDD development, design trade studies, virtual simulation, conceptual design of Air Vehicle, Avionics, Propulsion and Dynamics, Communications and Navigation, Weapons and Fire Control, Human Systems Integration, Survivability and Vulnerability, Missions and Missions Systems Management, Reliability and Maintainability, Training, Logistics, Sensor, Pilotage and Targeting					

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Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604292N / <i>FUTURE VERTICAL LIFT (MARITIME STRIKE)</i>	Project (Number/Name) 2940 / <i>Future Vertical Lift (Maritime Strike)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
<p>Systems, VMS/Flight Control, Software/Hardware architecture. and other related follow on activities. Support for these efforts will come from government, industry and academia such as Naval Research Labs, DARPA, Georgia Tech Research Institute, John Hopkins APL, Penn State University Applied Research Lab, and various industry partners. Production of MS-A supporting documents may include but are not limited to: an Acquisition Strategy (AS), Life Cycle Cost Estimate (LCCE), Life Cycle Sustainment Plan (LCSP) and Systems Engineering Plan (SEP).</p> <p>FY 2024 Base Plans: Post-AoA follow-on activities to include analyses, studies and production of acquisition documentation. Tasks to be performed may include post-AoA support, acquisition program management functions, engineering modeling and analysis, system specification and Draft CDD development, design trade studies, virtual simulation, conceptual design of Air Vehicle, Avionics, Propulsion and Dynamics, Communications and Navigation, Weapons and Fire Control, Human Systems Integration, Survivability and Vulnerability, Missions and Missions Systems Management, Reliability and Maintainability, Training, Logistics, Sensor, Pilotage and Targeting Systems, VMS/Flight Control, Software/Hardware architecture. and other related follow on activities. Support for these efforts will come from government, industry and academia such as Naval Research Labs, DARPA, Georgia Tech Research Institute, John Hopkins APL, Penn State University Applied Research Lab, and various industry partners. Production of MS-A supporting documents may include but are not limited to: an Acquisition Strategy (AS), Life Cycle Cost Estimate (LCCE), Life Cycle Sustainment Plan (LCSP) and Systems Engineering Plan (SEP).</p> <p>FY 2024 OCO Plans: N/A</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease from FY 2023 to FY 2024 reflects the completion of the AoA and the transition into post-AoA efforts such as documentation development, progressing towards a Milestone A program entry.</p>					
Accomplishments/Planned Programs Subtotals	8.269	5.103	2.100	0.000	2.100

C. Other Program Funding Summary (\$ in Millions) N/A
Remarks

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D. Acquisition Strategy

The Analysis of Alternatives (AoA) was initiated in 2QFY2022 to begin the assessment of the technical feasibility, operational feasibility, technical risk, and affordability of potential materiel and non-materiel solutions. The AoA will be completed in 1QFY2023 resulting in a recommendation for post-AoA follow-on efforts and a Milestone A entry. In FY 2024, post-AoA follow-on efforts will occur.

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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 / 4				PE 0604292N / FUTURE VERTICAL LIFT (MARITIME STRIKE)				2940 / Future Vertical Lift (Maritime Strike)								
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	
Prototype Systems	C/FFP	Northrop Grumman : Woodland Hills, CA	0.000	2.027	Jun 2022	0.000		0.000		-		0.000	0.000	2.027	2.027	
Prototype Systems	C/FFP	Lockheed Martin : Owego, NY	0.000	0.500	Nov 2022	0.000		0.000		-		0.000	0.000	0.500	0.500	
Subtotal			0.000	2.527		0.000		0.000		-		0.000	0.000	2.527	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	
Government Engineering Support	WR	NAWC AD : Patuxent River, MD	2.450	3.772	Nov 2021	3.066	Nov 2022	1.261	Nov 2023	-		1.261	0.000	10.549	-	
Trade Studies/ Requirements Analysis	Various	Various : Various	0.884	0.161	Nov 2021	1.000	Dec 2022	0.412	Dec 2023	-		0.412	0.000	2.457	2.457	
AoA Study	C/CPFF	RAND Corporation : Washington, DC	1.250	0.575	Nov 2021	0.000		0.000		-		0.000	0.000	1.825	1.825	
Architecture Framework Analysis	Various	Various : Various	0.000	0.704	Dec 2021	0.500	Dec 2022	0.206	Dec 2023	-		0.206	0.000	1.410	1.410	
Subtotal			4.584	5.212		4.566		1.879		-		1.879	0.000	16.241	N/A	
Management Services (\$ 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	
Program Management	WR	NAWC AD : Patuxent River, MD	0.454	0.530	Nov 2021	0.517	Nov 2022	0.213	Nov 2023	-		0.213	0.000	1.714	-	
Travel	Various	Various : Various	0.000	0.000		0.020	Oct 2022	0.008	Oct 2023	-		0.008	0.000	0.028	-	
Subtotal			0.454	0.530		0.537		0.221		-		0.221	0.000	1.742	N/A	

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

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Proj 2940	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
	Analysis of Alternatives Study																											
	Program Planning and Documentation																											
Milestones																												

MS-A
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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 2940				
Analysis of Alternatives	2	2022	1	2023
Program Planning and Documentation	1	2022	4	2024
Milestones: MS-A	4	2024	4	2024