Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy	Date: February 2020
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604212N *I Other Helicopter Development*

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	120.130	23.307	38.835	18.133	-	18.133	85.020	114.475	121.608	147.826	Continuing	Continuing
1109: *CH/MH-53*	75.171	12.390	16.454	6.801	-	6.801	3.649	3.215	2.286	2.333	Continuing	Continuing
2460: *VH-3/VH-60*	37.071	1.304	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	38.375
3406: *Attack and Utility Replacement Aircraft*	7.888	9.613	12.381	11.332	-	11.332	81.371	111.260	119.322	145.493	Continuing	Continuing
9999: *Congressional Adds*	0.000	0.000	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.000

A. Mission Description and Budget Item Justification

This Program Element includes funding for the development support for improvements to current systems for CH/MH-53, MH-60 development, VH-3/VH-60, and new development of Attack and Utility Replacement Aircraft (AURA) capability. The H-53 is the premier heavy lift helicopter for the Marine Corps and the only operational airborne mine sweeping platform for the Navy. H-53 RDT&E efforts focus on trade studies and risk reduction measures to identify candidate survivability, safety, avionics, cargo handling, cockpit and other airframe specific improvements to extend the service life. The VH-3/VH-60 is required to provide safe and timely transportation for the President and Vice President of the United States, heads of state and others as directed by the White House Military Office. AURA is a Joint Department initiative to address vertical lift capability requirements and determine feasible and affordable solutions in support of the Joint Warfighter.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	23.579	28.835	54.458	-	54.458
Current President's Budget	23.307	38.835	18.133	-	18.133
Total Adjustments	-0.272	10.000	-36.325	-	-36.325
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.272	0.000			
• Program Adjustments	0.000	0.000	-36.835	-	-36.835
• Rate/Misc Adjustments	0.000	0.000	0.510	-	0.510

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2019	FY 2020
Project: 9999: *Congressional Adds*		
Congressional Add: *Attack and utility helicopter replacement*	0.000	10.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy	Date: February 2020
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604212N *I Other Helicopter Development*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2019	FY 2020
Congressional Add Subtotals for Project: 9999	0.000	10.000
Congressional Add Totals for all Projects	0.000	10.000

Change Summary Explanation

Cost/Technical/Schedule:
1109 CH/MH-53: The FY 2021 funding request was reduced by $2.429M to account for the availability of prior year execution balances.
2460 VH-3/VH-60: Not Applicable
3406 Attack and Utility Replacement Aircraft:
Cost: The FY 2021 funding request was reduced by $1.627M to account for the availability of prior year execution balances. $32.411 reduced to support higher priority programs.

Schedule: Milestone A delay was a result of Marine Corps re-prioritization of the Aviation Portfolio and to incorporate lessons learned from the Army's Future Long Range Assault Aircraft (FLRAA) program which will allow the AURA program to benefit from the Army's accelerated FLRAA development timeline.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604212N / *Other Helicopter Development*	Project (Number/Name) 1109 / *CH/MH-53*	

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
1109: *CH/MH-53*	75.171	12.390	16.454	6.801	-	6.801	3.649	3.215	2.286	2.333	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The H-53 helicopter is the premier heavy lift helicopter for the Marine Corps and the only operational airborne mine sweeping platform for the Navy. H-53 efforts will continue to develop and qualify components, prior to production and approval decisions, in order to replace obsolete system components. Emphasis will be placed on supportability improvement modifications that will sustain the H-53 aircraft until the transition of the H-53K is complete. These efforts combined, will significantly improve the readiness of the H-53 fleet while reducing long term operational and supportability costs. Survivability efforts to address improved situational awareness to pilots will include improved Digital Interoperability and improve Degraded Visual Environment Awareness. Modeling and simulation will be used to the maximum practical extent throughout this effort. Manned Flight Simulator will be utilized to develop, install and test interim modifications to existing H-53 legacy avionics, while maintaining the original basic system footprint and functionality. As a part of this effort, a complete Electro Magnetic Vulnerability assessment will be required for the affected and/or modified systems.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: H-53 Avionics	3.716	4.960	2.550	0.000	2.550
Articles:	-	-	-	-	-
FY 2020 Plans: Integrate software applications for cockpit and avionics improvements, to include the development of new sensors. Develop flight control computer and test set design modifications to address anticipated obsolescence issues. Conduct Business Case Analyses to determine impact of high Operation and Support cost drivers and address alternatives to mitigate identified issues. Development and Integration of improved Degraded Visual Environmental/Low Speed Precision Control Awareness to include coupled flight control capability.					
FY 2021 Base Plans: Continue to integrate software applications for cockpit and avionics improvements, to include the development of new sensors. Develop flight control computer and test set design modifications to address anticipated obsolescence issues. Conduct Business Case Analyses to determine impact of high Operation and Support cost drivers and address alternatives to mitigate identified issues. Development and Integration of improved Degraded Visual Environmental/Low Speed Precision Control Awareness to include coupled flight control capability.					
FY 2021 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 1109 / *CH/MH-53*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Total decrease of $2.410 million from FY20 to FY21 comprised of $0.381 million driven by decreased R&D activities associated with Degraded Visual Environment/Low Speed Precision Control as it transitions to production as well as $2.029 million to account for the availability of prior year execution balances.					
Title: H-53 Survivability ***Articles:*** ***FY 2020 Plans:*** Perform trade studies, risk reduction, design, development, model, integration and test activities for H-53 safety and survivability to include increased situational awareness via digital interoperability/Low Speed Precision Control. ***FY 2021 Base Plans:*** Continue to perform trade studies, risk reduction, design, development, model, integration and test activities for H-53 safety and survivability to include increased situational awareness via digital interoperability/Low Speed Precision Control. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Decrease of $0.444 million from FY20 to FY21 is driven by decreased modeling, integration, and test activities associated with LSPC.	1.472 -	2.013 -	1.569 -	0.000 -	1.569 -
Title: H-53 Propulsion ***Articles:*** ***FY 2020 Plans:*** Conduct Business Case Analyses to determine impact of high Operation and Support Propulsion cost drivers. Develop, manufacture and test the new production T-64 fuel control prototype to improve safety, operability, reliability, while eliminating obsolescence issues. ***FY 2021 Base Plans:***	0.450 -	0.413 -	0.413 -	0.000 -	0.413 -

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 1109 / *CH/MH-53*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continue to conduct Business Case Analyses to determine impact of high Operation and Support Propulsion cost drivers. Develop, manufacture and test the new production T-64 fuel control prototype to improve safety, operability, reliability, while eliminating obsolescence issues. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** There is no change from FY2020 to FY2021.					
Title: Project Management Support	1.633	1.620	0.874	0.000	0.874
Articles:	-	-	-	-	-
FY 2020 Plans: Provide in-house, field activity, and contractor support of IPTs to allow for studies and analyses, preparation of acquisition documentation and examination of equipment and avionics for the H-53. Efforts include, but are not limited to, government development support, engineering support, product management support, system engineering and logistics support, and travel for the H-53 program. ***FY 2021 Base Plans:*** Continue to provide in-house, field activity, and contractor support of IPTs to allow for studies and analyses, preparation of acquisition documentation and examination of equipment and avionics for the H-53. Efforts include, but are not limited to, government development support, engineering support, product management support, system engineering and logistics support, and travel for the H-53 program. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Total decrease of $0.746 million from FY20 to FY21 comprised of $0.531 million is a result of an overall decrease in H-53E R&D activities as evidenced by decreasing RDT&E TOA as well as $0.215 million to account for the availability of prior year execution balances.					
Title: H-53 Airframe	1.554	1.429	0.846	0.000	0.846
Articles:	-	-	-	-	-
FY 2020 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 1109 / *CH/MH-53*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Develop software tool to support aircraft diagnostics, health monitoring and Fatigue Life Estimating (FLE) which will interface with Naval Enterprise Logistics Support Systems. The systems will provide a seamless environment for processing data, troubleshooting and documenting the technical updates required for the H-53 airframe. Continue to develop tools to study/analyze and qualify components, prior to production and approval decisions, in order to replace obsolete system components. Perform trade studies, risk reduction, design, development, integration and test activities for the H-53 airframe to include, but not limited to, main rotor head, cowlings, aircraft structure, drive train, and various dynamic components. ***FY 2021 Base Plans:*** Continue to develop software tool to support aircraft diagnostics, health monitoring and Fatigue Life Estimating (FLE) which will interface with Naval Enterprise Logistics Support Systems. The systems will provide a seamless environment for processing data, troubleshooting and documenting the technical updates required for the H-53 airframe. Continue to develop tools to study/analyze and qualify components, prior to production and approval decisions, in order to replace obsolete system components. Perform trade studies, risk reduction, design, development, integration and test activities for the H-53 airframe to include, but not limited to, main rotor head, cowlings, aircraft structure, drive train, and various dynamic components. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Total decrease of $0.583 million from FY20 to FY21 comprised of $0.398 million by declining R&D activities associated with Integrated Vehicle Health Monitoring Unit (IVHMU) as procurement activities increase in FY21 as well as $0.185 million to account for the availability of prior year execution balances.					
Title: APR-39D(V)2	3.565	6.019	0.549	0.000	0.549
Articles:	-	-	-	-	-
FY 2020 Plans: Continue development and integration of APR-39D(V)2 to consolidate digital interoperability and improve the probability of detection against radar guided threats. Corrects deficiencies from previous receiver by enabling self protection from radar guided threats on the battlefield. ***FY 2021 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 1109 / *CH/MH-53*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Completion of APR-39D(V)2 prototype development to consolidate digital interoperability and improve the probability of detection against radar guided threats. Corrects deficiencies from previous receiver by enabling self protection from radar guided threats on the battlefield. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Decrease of $5.470 million from FY2020 to FY2021 is due to completion of APR-39D(V)2 prototype.					
Accomplishments/Planned Programs Subtotals	12.390	16.454	6.801	0.000	6.801

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• APN/0528: *H-53 Series*	57.578	42.745	68.745	-	68.745	164.717	210.905	168.966	157.624	Continuing	Continuing

Remarks

APN-5 funding profile does not include funding designated for the CH-53K aircraft (OSIPS 007-19 and 008-19).

D. Acquisition Strategy

This is a non-ACAT program. H-53 RDT&E efforts will focus on trade studies and risk reduction measures to identify candidate survivability, interoperability, safety, avionics, cargo handling, cockpit and other airframe specific improvements to extend the service life.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 1109 / *CH/MH-53*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC AD : Patuxent River, MD	6.995	0.784	Nov 2018	1.518	Nov 2019	0.821	Nov 2020	-		0.821	Continuing	Continuing	Continuing
Systems Engineering Contract	C/CPFF	Various : Various	1.109	1.191	Feb 2019	1.191	Feb 2020	0.670	Feb 2021	-		0.670	0.000	4.161	4.161
Systems Engineering	WR	Various : Various	1.237	1.616	Nov 2018	1.953	Nov 2019	0.835	Nov 2020	-		0.835	Continuing	Continuing	Continuing
Design and Development	WR	Various : Various	3.114	1.839	Mar 2019	1.323	Mar 2020	0.242	Mar 2021	-		0.242	0.000	6.518	-
Prior Year Prod Dev no longer funded in the FYDP	TBD	TBD : TBD	19.475	0.000		0.000		0.000		-		0.000	0.000	19.475	-
		Subtotal	31.930	5.430		5.985		2.568		-		2.568	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	Various	Various : Various	11.656	2.175	Mar 2019	4.865	Mar 2020	1.170	Mar 2021	-		1.170	Continuing	Continuing	Continuing
GFE	Various	NAWC AD : Patuxent River, MD	3.581	0.280	Nov 2018	0.280	Nov 2019	0.280	Nov 2020	-		0.280	Continuing	Continuing	Continuing
		Subtotal	15.237	2.455		5.145		1.450		-		1.450	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various : Various	12.974	1.835	Mar 2019	2.420	Mar 2020	1.375	Mar 2021	-		1.375	Continuing	Continuing	Continuing
		Subtotal	12.974	1.835		2.420		1.375		-		1.375	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 1109 / *CH/MH-53*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWC AD : Patuxent River, MD	8.254	2.420	Nov 2018	2.654	Nov 2019	1.158	Nov 2020	-		1.158	Continuing	Continuing	Continuing
Travel	Various	Various : Various	2.102	0.250	Oct 2018	0.250	Oct 2019	0.250	Nov 2020	-		0.250	Continuing	Continuing	Continuing
Prior Year Mgmt no longer funded in the FYDP	Various	Various : Various	4.674	0.000		0.000		0.000		-		0.000	0.000	4.674	-
		Subtotal	15.030	2.670		2.904		1.408		-		1.408	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	75.171	12.390		16.454		6.801		-		6.801	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 1109 / *CH/MH-53*

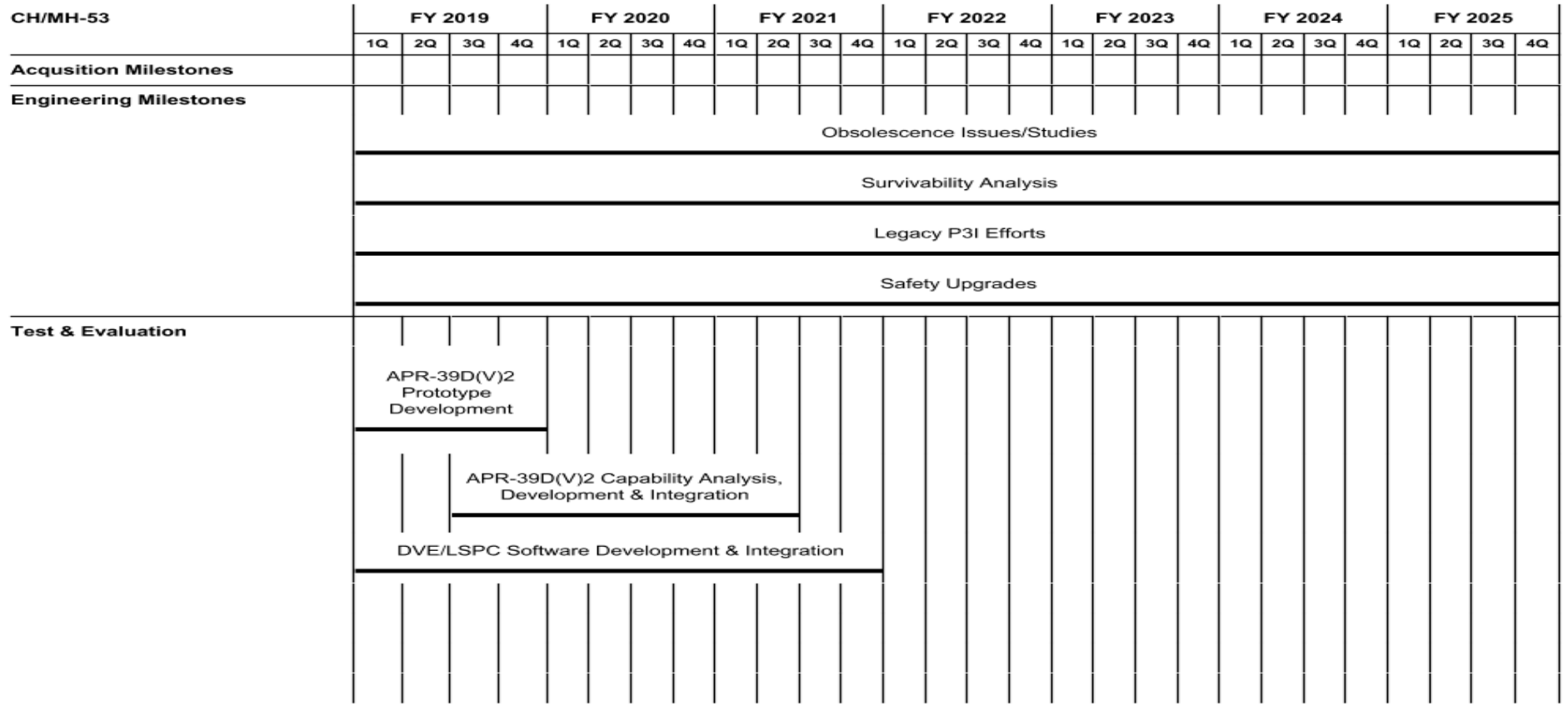

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 1109 / *CH/MH-53*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
CH/MH-53				
Engineering Milestones: - Obsolescence Issues/Studies	1	2019	4	2025
Engineering Milestones: - Survivability Analysis	1	2019	4	2025
Engineering Milestones: - Legacy P3I Efforts	1	2019	4	2025
Engineering Milestones: - Safety Upgrades	1	2019	4	2025
Test & Evaluation: APR-39D(V)2 Prototype Development	1	2019	4	2019
Test & Evaluation: APR-39D(V)2 Capability Analysis, Development & Integration	3	2019	2	2021
Test & Evaluation: Degraded Visual Environment/Low Speed Precision Control Development & Integration	1	2019	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604212N / *Other Helicopter Development*	Project (Number/Name) 2460 / *VH-3/VH-60*	

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
2460: *VH-3/VH-60*	37.071	1.304	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	38.375
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Marine Helicopter Squadron One (HMX-1) is required to provide safe and timely transportation for the President and Vice President of the United States, heads of state and others as directed by the White House Military Office. Currently two Type, Model, Series aircraft are used by HMX-1 for the Presidential support mission - the VH-3D and the VH-60N. This project currently funds the VH Executive Helicopter's Aircraft Life Management Program (ALMP).

Program completes in 2019.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: VH Executive Helicopter Aircraft Life Management Program	1.304	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: VH Executive Helicopter Aircraft Life Management Program: Provides for management and improvement of all Executive Helicopter systems readiness including safety, operational weight, mission availability, structural integrity, component reliability, maintainability, software, and obsolescence issues as they arise.					
FY 2020 Plans: N/A					
FY 2021 Base Plans: N/A					
FY 2021 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	1.304	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 2460 / *VH-3/VH-60*

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• APN/0566: *Executive Helicopters Series*	19.566	8.933	29.086	-	29.086	61.152	77.405	79.001	80.572	Continuing	Continuing

Remarks

D. Acquisition Strategy

VH Executive Helicopter ALMP will include trade studies and risk reduction efforts necessary to address safety, operational weight, mission availability, structural integrity, component reliability, maintainability, software, and obsolescence issues as they arise.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 2460 / *VH-3/VH-60*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	SS/CPFF	Sikorsky : Stratford, CT	8.675	0.000		0.000		0.000		-		0.000	0.000	8.675	8.675
Primary HW Development	SS/CPFF	Sikorsky : Stratford, CT	0.899	0.000		0.000		0.000		-		0.000	0.000	0.899	0.899
Software Development	SS/FFP	Rockwell Collins : Cedar Rapids, IA	2.425	0.000		0.000		0.000		-		0.000	0.000	2.425	2.425
Systems Engineering	WR	NAWCAD : Patuxent River, MD	1.987	0.000		0.000		0.000		-		0.000	0.000	1.987	-
Systems Engineering	Various	Various : Various	0.607	0.000		0.000		0.000		-		0.000	0.000	0.607	-
Prior Year Prod Dev no longer funded in the FYDP	Various	Various : Various	5.321	0.000		0.000		0.000		-		0.000	0.000	5.321	-
Systems Engineering	SS/FFP	Lockheed Martin : Greenfield, SC	0.000	0.342	Oct 2018	0.000		0.000		-		0.000	0.000	0.342	0.342
		Subtotal	19.914	0.342		0.000		0.000		-		0.000	0.000	20.256	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation-WBLoS	WR	NAWCAD : Patuxent River, MD	2.401	0.000		0.000		0.000		-		0.000	0.000	2.401	-
		Subtotal	2.401	0.000		0.000		0.000		-		0.000	0.000	2.401	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Patuxent River, MD	4.186	0.959	Nov 2018	0.000		0.000		-		0.000	0.000	5.145	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 2460 / *VH-3/VH-60*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering	SS/CPFF	NAVSEA : Washington Navy Yard, DC	0.650	0.000		0.000		0.000		-		0.000	0.000	0.650	0.650
Travel	Various	Various : Various	0.427	0.003	Aug 2019	0.000		0.000		-		0.000	0.000	0.430	-
Prior Year Mgmt Services no longer funded in the FYDP	Various	Various : Various	9.493	0.000		0.000		0.000		-		0.000	0.000	9.493	-
		Subtotal	14.756	0.962		0.000		0.000		-		0.000	0.000	15.718	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	37.071	1.304		0.000		0.000		-		0.000	0.000	38.375	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 2460 / *VH-3/VH-60*

	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
VH-3/VH-60																												
Engineering Milestones: VH-3D / VH-60N ALMP																												

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 2460 / *VH-3/VH-60*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
VH-3/VH-60				
Engineering Milestones: VH-3D / VH-60N ALMP	1	2019	4	2019

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604212N / *Other Helicopter Development*	Project (Number/Name) 3406 / *Attack and Utility Replacement Aircraft*	

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
3406: *Attack and Utility Replacement Aircraft*	7.888	9.613	12.381	11.332	-	11.332	81.371	111.260	119.322	145.493	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Attack and Utility Replacement Aircraft (AURA) is a USMC initiative to address vertical lift capability requirements and determine feasible and affordable solutions in support of the USMC Warfighter. AURA will provide unmatched strategic, operational, and tactical agility to perform a multitude of missions currently unachievable by any conventionally configured rotorcraft. AURA will be a force multiplier with superior performance, payload, survivability, agility, endurance, and reliability that enables warfighters to win in a future dynamic battlespace. AURA offers evolutionary operational opportunities over current Vertical Take Off Landing (VTOL) aircraft with an anticipated Initial Operational Capability (IOC) of 2036. In order to reach this goal, anticipated efforts include achieving Milestone A, RFP development and Release, Source Selection, acquisition documentation, risk reduction initiatives, and contract award.

The Marine Corps AURA requirements emphasize range and speed similar to the MV-22. AURA will increase the Marine Air Ground Task Force's (MAGTF) capacity of long-range fires. AURA will utilize DOTmLPF-P 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. The air vehicle 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.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Attack and Utility Replacement Aircraft	9.613	12.381	11.332	0.000	11.332
Articles:	-	-	-	-	-
FY 2020 Plans: FY 2020 BASE PLANS WEAPONS AND SENSORS TESTING AND INTEGRATION: Continued support for AURA entry into Milestone A to include continued evaluation of the technical feasibility of industry products, technical risk, and affordability of potential strategic solutions with the intent to develop the next generation of rotary wing aircraft supporting new VTOL capabilities, and assess subsystem commonality with US Army Vertical Lift development efforts. Tasks to be performed include but are not limited to Acquisition Program Management functions, Acquisition Documentation to support the Milestone, Request for Proposal					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 3406 / *Attack and Utility Replacement Aircraft*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Development and Release, Engineering modeling and analysis, TEMP development, a Model Based System Specification, Draft Capability Development Document development, and design trade studies and prototyping on the Air Vehicle and all associated systems. 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. ***FY 2021 Base Plans:*** FY 2021 BASE PLANS WEAPONS AND SENSORS TESTING AND INTEGRATION: Tasks to be performed include but are not limited to Acquisition Program Management functions, Acquisition Documentation to support the Milestone, Request for Proposal Development, Engineering modeling and analysis, TEMP development, a Model Based System Specification, Draft Capability Development Document development, and design trade studies and prototyping on the Air Vehicle and all associated systems. These efforts will include but not be limited to studies, virtual simulation, conceptual design, prototyping 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, and Software/Hardware architecture. 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. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The decrease from FY2020 to FY2021 funding and Milestone A delay is a result of Marine Corps re-prioritization of the Aviation Portfolio and to incorporate lessons learned from the Army's Future Long Range Assault Aircraft (FLRAA) program which will allow the AURA program to benefit from the Army's accelerated FLRAA development timeline.					
Accomplishments/Planned Programs Subtotals	9.613	12.381	11.332	0.000	11.332

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 3406 / *Attack and Utility Replacement Aircraft*

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• RDTE/0604212N/9999: *Congressional Adds*	0.000	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.000

Remarks

D. Acquisition Strategy

The Analysis of Alternatives (AoA) was initiated in 3rd Quarter FY2017 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 a recommendation for a Milestone A entry and OSD Sufficiency. In FY2020, RFP preparation and acquisition documentation efforts will be continued/initiated. In FY2021, industry prototyping will begin, RFP and requirements documentation efforts will continue in preparation for a FY2022 Milestone A program entry. The program will complete development and testing of the most cost effective system with an anticipated IOC of FY2036.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 3406 / *Attack and Utility Replacement Aircraft*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	Various : Various	0.000	0.000		0.000		1.820	Jan 2021	-		1.820	Continuing	Continuing	Continuing
Studies and Analysis	C/CPFF	Various : Various	0.000	0.000		1.600	Jan 2020	1.755	Jan 2021	-		1.755	0.000	3.355	-
		Subtotal	0.000	0.000		1.600		3.575		-		3.575	Continuing	Continuing	N/A

Remarks

Increase in FY21 for Hardware supports the development of prototypes for future cockpit concepts.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NAWCAD : Patuxent River, MD	1.813	3.413	Jan 2019	3.515	Jan 2020	2.078	Jan 2021	-		2.078	Continuing	Continuing	Continuing
Development Support	WR	Various : Various	1.600	1.606	Jan 2019	1.883	Jan 2020	0.829	Jan 2021	-		0.829	Continuing	Continuing	Continuing
		Subtotal	3.413	5.019		5.398		2.907		-		2.907	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test and Evaluation	WR	Various : Various	0.000	0.000	Nov 2018	0.320	Nov 2019	0.350	Nov 2020	-		0.350	Continuing	Continuing	Continuing
Studies and Anaylsis	C/CPFF	Various : Various	3.095	1.456	Jan 2019	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	3.095	1.456		0.320		0.350		-		0.350	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 3406 / *Attack and Utility Replacement Aircraft*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPIF	Various : Various	0.792	0.948	Nov 2018	2.449	Nov 2019	2.808	Nov 2020	-		2.808	Continuing	Continuing	Continuing
Program Management Support	WR	Various : Various	0.383	1.810	Nov 2018	2.201	Nov 2019	1.267	Nov 2020	-		1.267	Continuing	Continuing	Continuing
Travel	WR	NAVAIR : Patuxent River, MD	0.205	0.380	Oct 2018	0.413	Oct 2019	0.425	Oct 2020	-		0.425	Continuing	Continuing	Continuing
		Subtotal	1.380	3.138		5.063		4.500		-		4.500	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.888	9.613		12.381		11.332		-		11.332	Continuing	Continuing	N/A

Remarks

FY2019 deltas reflect the need to move from the AoA phase of the program into the requirements and request for proposal development phase of the program. This resulted in an overall decrease in funding under T&E and an increase in Support and Management Services.

FY20 changes reflect the need to ramp down studies and analysis efforts and begin acquisition and Milestone A documentation efforts. This resulted in a significant decrease in Studies and Analysis efforts and an increase in Support and Management Services.

The decrease from FY2020 to FY2021 funding and Milestone A delay is a result of Marine Corps re-prioritization of the Aviation Portfolio and to incorporate lessons learned from the Army's Future Long Range Assault Aircraft (FLRAA) program which will allow the AURA program to benefit from the Army's accelerated FLRAA development timeline.

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 3406 / *Attack and Utility Replacement Aircraft*

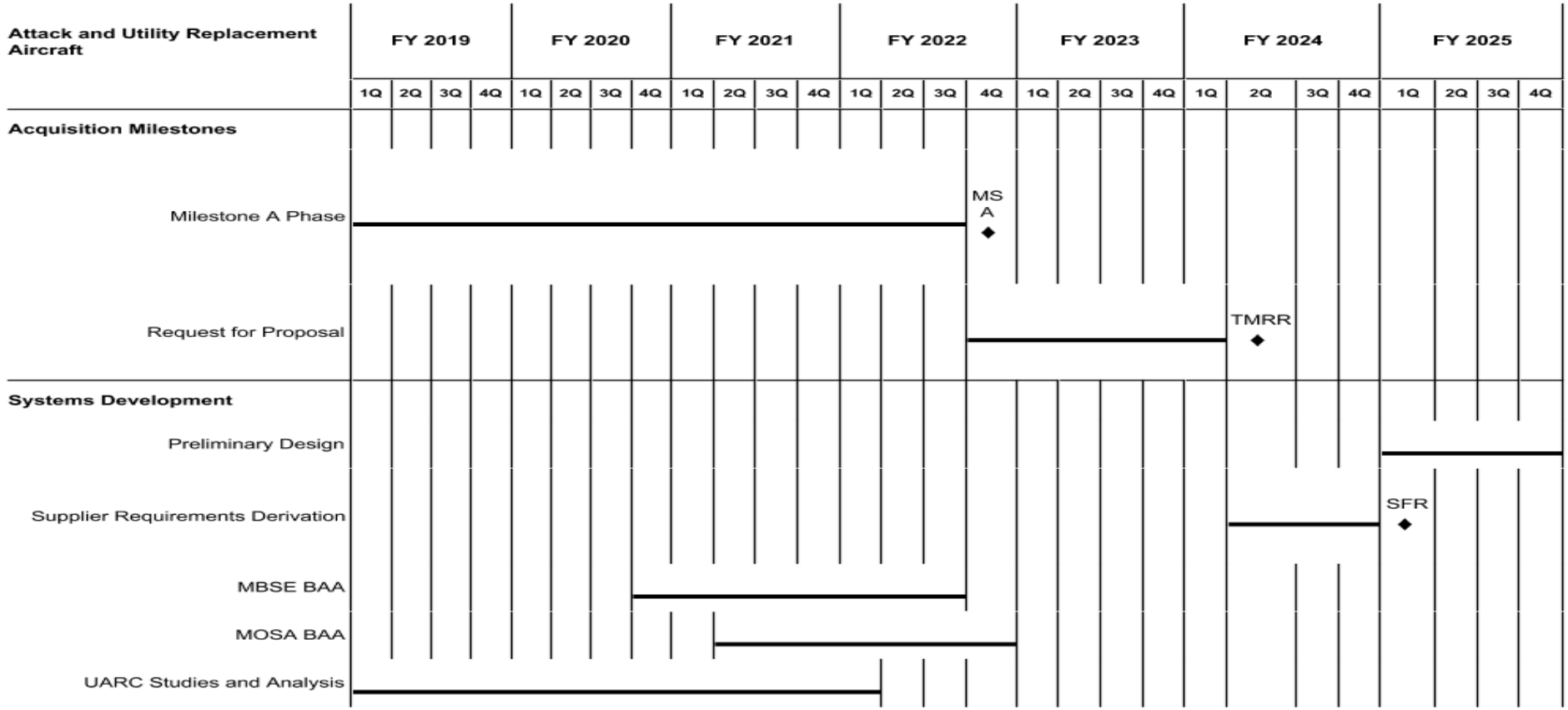

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 3406 / *Attack and Utility Replacement Aircraft*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Attack and Utility Replacement Aircraft				
Acquisition Milestones: Milestone A Phase: Schedule Detail	1	2019	3	2022
Acquisition Milestones: Milestone A Phase: Milestone A	4	2022	4	2022
Acquisition Milestones: Request for Proposal: Schedule Detail	4	2022	1	2024
Acquisition Milestones: Request for Proposal: Technical Maturation Risk Reduction (TMRR) Award	2	2024	2	2024
Systems Development: Preliminary Design: Schedule Detail	1	2025	4	2025
Systems Development: Supplier Requirements Derivation: Schedule Detail	2	2024	4	2024
Systems Development: Supplier Requirements Derivation: SFR	1	2025	1	2025
Systems Development: MBSE BAA: Schedule Detail	4	2020	3	2022
Systems Development: MOSA BAA: Schedule Detail	2	2021	4	2022
Systems Development: UARC Studies and Analysis: Schedule Detail	1	2019	1	2022

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604212N / *Other Helicopter Development*	Project (Number/Name) 9999 / *Congressional Adds*	

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
9999: *Congressional Adds*	0.000	0.000	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Attack and Utility Replacement Aircraft (AURA) is a USMC initiative to address vertical lift capability requirements and determine feasible and affordable solutions in support of the USMC Warfighter. AURA will provide unmatched strategic, operational, and tactical agility to perform a multitude of missions currently unachievable by any conventionally configured rotorcraft. AURA will be a force multiplier with superior performance, payload, survivability, agility, endurance, and reliability that enables warfighters to win in a future dynamic battlespace. AURA offers evolutionary operational opportunities over current Vertical Take Off Landing (VTOL) aircraft with an anticipated Initial Operational Capability (IOC) of 2036. In order to reach this goal, anticipated efforts include achieving Milestone A, RFP development and Release, Source Selection, acquisition documentation, risk reduction initiatives, and contract award.

The Marine Corps AURA requirements emphasize range and speed similar to the MV-22. AURA will increase the Marine Air Ground Task Force's (MAGTF) capacity of long-range fires. AURA will utilize DOTmLPF-P 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. The air vehicle 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.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020
Congressional Add: Attack and utility helicopter replacement	0.000	10.000
FY 2019 Accomplishments: N/A		
FY 2020 Plans: N/A		
Congressional Adds Subtotals	0.000	10.000

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• RDTE/0604212N/3406: *Attack and Utility Replacement Aircraft*	9.613	12.381	11.332	-	11.332	81.371	111.260	119.322	145.493	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 9999 / *Congressional Adds*

C. Other Program Funding Summary ($ in Millions)

Line Item	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

Remarks

D. Acquisition Strategy

The Analysis of Alternatives (AoA) was initiated in 3rd Quarter FY2017 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 a recommendation for a Milestone A entry and OSD Sufficiency. In FY2020, RFP preparation and acquisition documentation efforts will be continued/initiated. In FY2021, industry prototyping will begin, RFP and requirements documentation efforts will continue in preparation for a FY2022 Milestone A program entry. The program will complete development and testing of the most cost effective system with an anticipated IOC of FY2036.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 9999 / *Congressional Adds*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies and Analysis	C/CPFF	Various : Various	0.000	0.000		10.000	Aug 2020	0.000		-		0.000	0.000	10.000	-
		Subtotal	0.000	0.000		10.000		0.000		-		0.000	0.000	10.000	N/A

Remarks

FY20 Congressional funds support multiple concept advancement efforts in key areas, such as MOSA, MBSE, etc. in order to reduce risk for upcoming Milestone A.

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		10.000		0.000		-		0.000	0.000	10.000	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 9999 / *Congressional Adds*

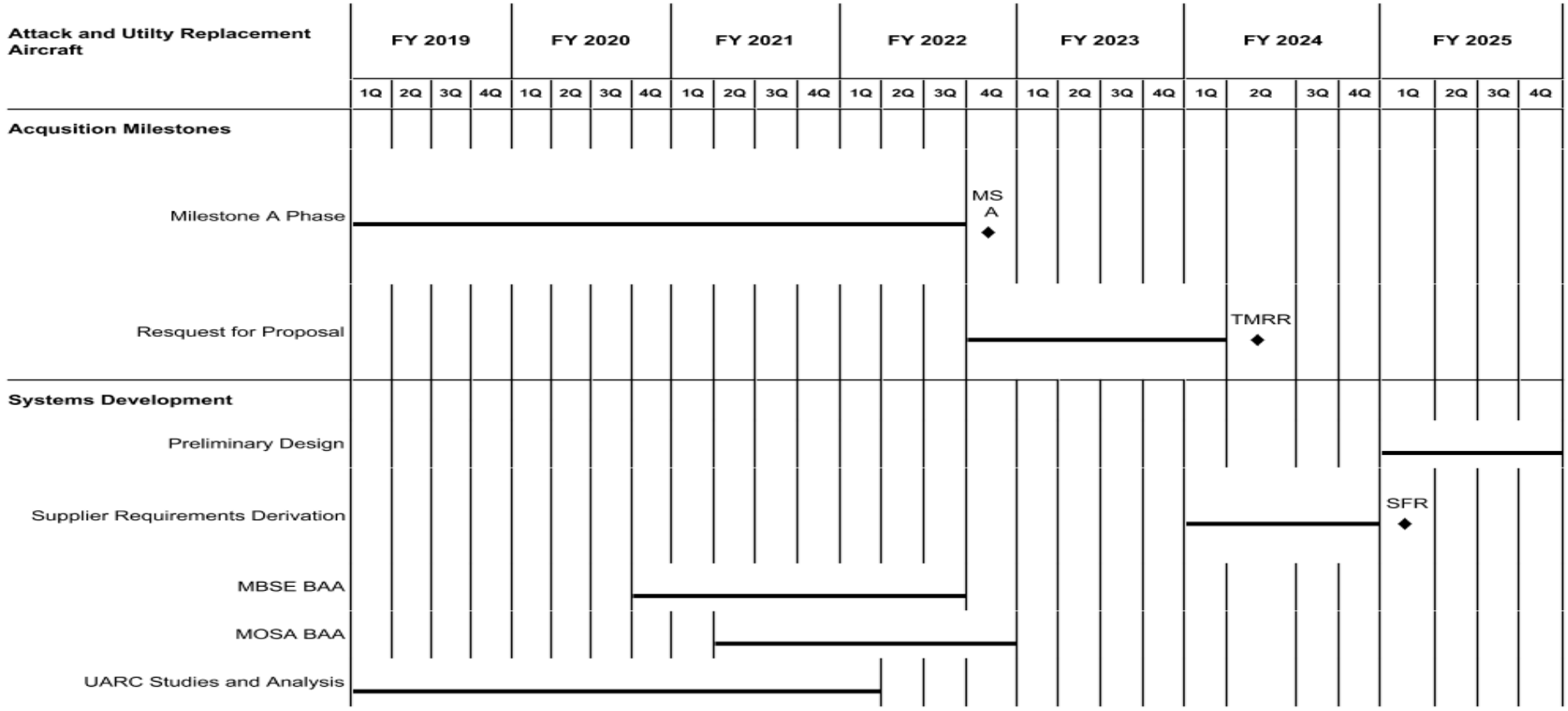

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Attack and Utilty Replacement Aircraft				
Acqusition Milestones: Milestone A Phase: Schedule Detail	1	2019	3	2022
Acqusition Milestones: Milestone A Phase: Milestone A	4	2022	4	2022
Acqusition Milestones: Resquest for Proposal: Schedule Detail	4	2022	1	2024
Acqusition Milestones: Resquest for Proposal: Technical Maturation Risk Reduction (TMRR) Award	2	2024	2	2024
Systems Development: Preliminary Design: Schedule Detail	1	2025	4	2025
Systems Development: Supplier Requirements Derivation: Schedule Detail	1	2024	4	2024
Systems Development: Supplier Requirements Derivation: SFR	1	2025	1	2025
Systems Development: MBSE BAA: Schedule Detail	4	2020	3	2022
Systems Development: MOSA BAA: Schedule Detail	2	2021	4	2022
Systems Development: UARC Studies and Analysis: Schedule Detail	1	2019	1	2022