Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy											Date: February 2018	
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 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
Total Program Element	87.883	5.889	26.786	32.128	-	32.128	33.940	52.813	135.992	148.325	Continuing	Continuing
1109: *CH/MH-53*	53.448	4.554	17.500	16.969	-	16.969	16.042	9.120	2.601	2.662	Continuing	Continuing
2460: *VH-3/VH-60*	34.435	1.335	1.309	1.310	-	1.310	0.000	0.000	0.000	0.000	0.000	38.389
3406: *Attack and Utility Replacement Aircraft*	0.000	0.000	7.977	13.849	-	13.849	17.898	43.693	133.391	145.663	Continuing	Continuing
Program MDAP/MAIS Code: **Project MDAP/MAIS Code(s):** 390												

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 Future Vertical Lift (FVL) 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. Future Vertical Lift (FVL) 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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	6.268	26.786	32.685	-	32.685
Current President's Budget	5.889	26.786	32.128	-	32.128
Total Adjustments	-0.379	0.000	-0.557	-	-0.557
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.079	0.000			
• Rate/Misc Adjustments	0.000	0.000	-0.557	-	-0.557
• Congressional Directed Reductions Adjustments	-0.300	-	-	-	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy	Date: February 2018
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*

Change Summary Explanation

The FY 2019 funding request was reduced by $0.523 million to account for the availability of prior year execution balances.

Cost/Technical/Schedule:

1109 CH/MH-53: Not Applicable

2460 VH-3/VH-60: Not Applicable

3406 Attack and Utility Replacement Aircraft: Not Applicable

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
1109: *CH/MH-53*	53.448	4.554	17.500	16.969	-	16.969	16.042	9.120	2.601	2.662	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: 390

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: H-53 Avionics	1.480	2.848	3.716	0.000	3.716
Articles:	-	-	-	-	-
FY 2018 Plans: Integrate software applications for cockpit and avionics improvements, to include the development of new sensors. Investigate solutions to address the degraded visual environment. 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. Create basis for APR-39D(V)2 to improve digital interoperability and detection against radar guided threats.					
FY 2019 Base 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					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
address alternatives to mitigate identified issues. Development and Integration of improved Degraded Visual Environmental Awareness to include coupled flight control capability. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $0.868M from FY 2018 to FY 2019 is due the test sets and development efforts required for Degraded Visual Environment integration.					
Title: H-53 Survivability	0.440	1.296	1.472	0.000	1.472
Articles:	-	-	-	-	-
FY 2018 Plans: Perform trade studies, risk reduction, design, development, model, integration and test activities for H-53 survivability to include increased situational awareness via digital interoperability. ***FY 2019 Base Plans:*** Perform trade studies, risk reduction, design, development, model, integration and test activities for H-53 survivability to include increased situational awareness via digital interoperability. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $0.176M from FY 2018 to FY 2019 is due to the increase of requirements for situational awareness in the H-53E aircraft.					
Title: H-53 Propulsion	0.433	0.442	0.450	0.000	0.450
Articles:	-	-	-	-	-
FY 2018 Plans: Conduct Business Case Analyses to determine impact of high Operation and Support Propulsion cost drivers and address alternatives to mitigate, as well as developing/integrating proposed solutions to the risk associated with #2 engine fires. ***FY 2019 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
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 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** There is no significant difference between FY 2018 and FY 2019.					
Title: Project Management Support ***Articles:*** ***FY 2018 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 2019 Base 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 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $0.032M from FY 2018 to FY 2019 is due to the increase of system engineering support required for the fielding of Automated Logistics Environment and Degraded Visual Environment development efforts.	0.726 -	1.620 -	1.652 -	0.000 -	1.652 -
Title: H-53 Airframe ***Articles:*** ***FY 2018 Plans:*** 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	1.475 -	2.175 -	1.554 -	0.000 -	1.554 -

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
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 2019 Base Plans:*** 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 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease of $0.621M from FY 2018 to FY 2019 is due to the completion of ALE tasks in FY 2019.					
Title: APR-39D(V)2	0.000	9.119	8.125	0.000	8.125
Articles:	-	-	-	-	-
FY 2018 Plans: Provide ability for consolidating 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 2019 Base 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 2019 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease of $1.117M from FY 2018 to FY 2019 is due to the development efforts required by the Prime Contractor for APR-39D(V)2.					
Accomplishments/Planned Programs Subtotals	4.554	17.500	16.969	0.000	16.969

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• APN/0528: *H-53 Series*	61.665	39.662	70.997	-	70.997	63.509	54.582	66.231	74.253	148.869	2,117.080

Remarks

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.

E. Performance Metrics

Successfully perform studies, analysis and develop software to address emergent H-53 issues. Successfully support developmental and operation test activities to qualify aircraft modifications/upgrades.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
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 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC AD : Patuxent River, MD	4.953	1.464	Nov 2016	1.618	Nov 2017	0.784	Nov 2018	-		0.784	Continuing	Continuing	Continuing
Systems Engineering Contract	C/CPFF	Sikorsky : Stratford, CT	0.482	0.614	Feb 2017	0.500	Feb 2018	0.000		-		0.000	0.000	1.596	1.596
Systems Engineering	WR	Various : Various	0.000	0.344	Nov 2016	0.600	Nov 2017	2.075	Nov 2018	-		2.075	Continuing	Continuing	Continuing
Design and Development	TBD	TBD : TBD	0.000	0.000		4.995	Mar 2018	2.218	Mar 2019	-		2.218	0.000	7.213	-
Systems Engineering Contract	TBD	TBD : TBD	0.000	0.000		0.000		2.100	Feb 2019	-		2.100	0.000	2.100	-
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	24.910	2.422		7.713		7.177		-		7.177	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	Various	Various : Various	3.885	0.786	Dec 2017	4.876	Mar 2018	3.277	Mar 2019	-		3.277	Continuing	Continuing	Continuing
GFE	Various	NAWC AD : Patuxent River, MD	3.581	0.319	Nov 2016	0.137	Nov 2017	0.280	Nov 2018	-		0.280	Continuing	Continuing	Continuing
		Subtotal	7.466	1.105		5.013		3.557		-		3.557	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various : Various	7.980	0.407	Mar 2017	1.674	Mar 2018	3.065	Mar 2019	-		3.065	Continuing	Continuing	Continuing
		Subtotal	7.980	0.407		1.674		3.065		-		3.065	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
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 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWC AD : Patuxent River, MD	6.514	0.538	Nov 2016	2.950	Nov 2017	2.920	Nov 2018	-		2.920	Continuing	Continuing	Continuing
Travel	Various	Various : Various	1.904	0.082	Oct 2016	0.150	Oct 2017	0.250	Oct 2018	-		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	13.092	0.620		3.100		3.170		-		3.170	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	53.448	4.554		17.500		16.969		-		16.969	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 1109 / *CH/MH-53*

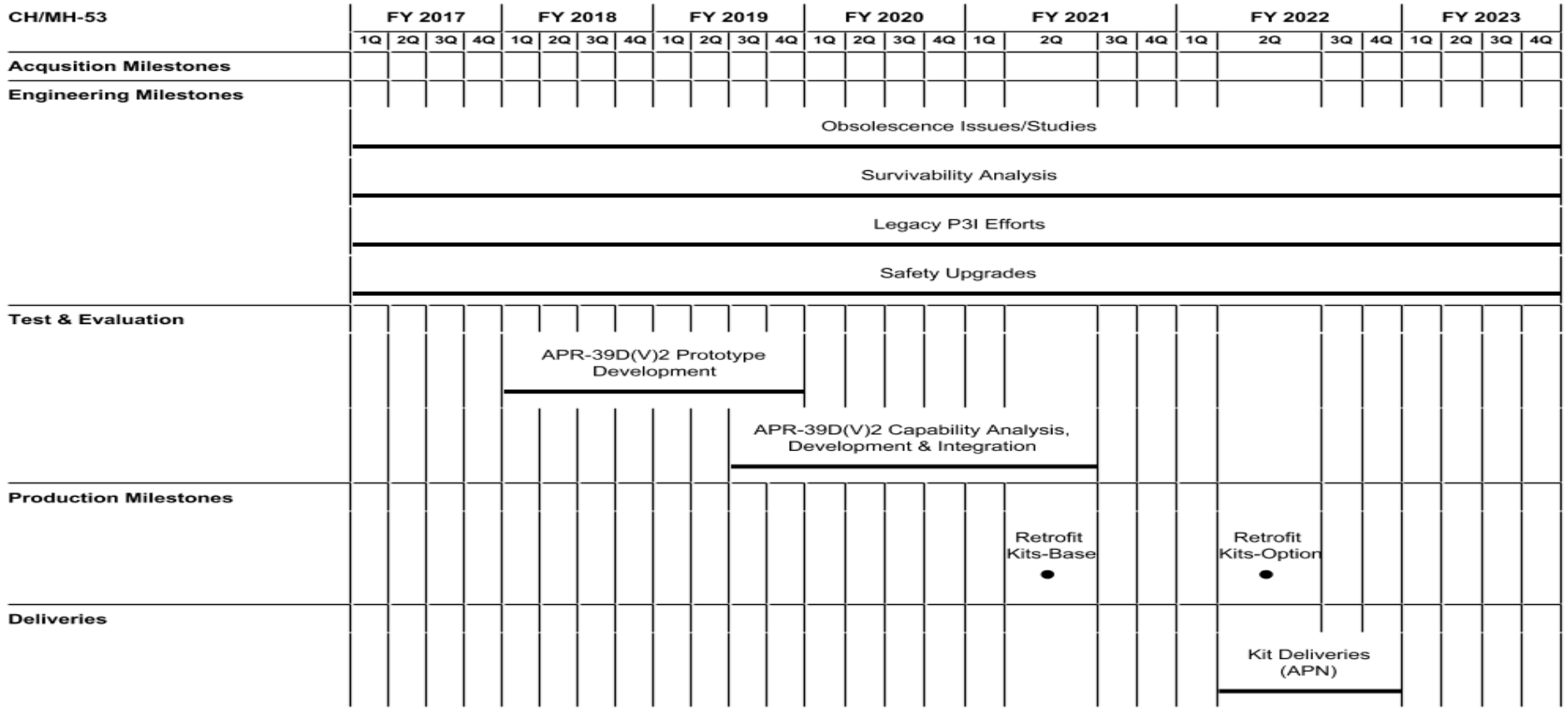

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 1109 / *CH/MH-53*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
CH/MH-53				
Engineering Milestones: - Obsolescence Issues/Studies	1	2017	4	2023
Engineering Milestones: - Survivability Analysis	1	2017	4	2023
Engineering Milestones: - Legacy P3I Efforts	1	2017	4	2023
Engineering Milestones: - Safety Upgrades	1	2017	4	2023
Test & Evaluation: APR-39D(V)2 Prototype Development	1	2018	4	2019
Test & Evaluation: APR-39D(V)2 Capability Analysis, Development & Integration	3	2019	2	2021
Production Milestones: Retrofit Kits-Base	2	2021	2	2021
Production Milestones: Retrofit Kits-Option	2	2022	2	2022
Deliveries: Kit Deliveries (APN)	2	2022	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy											Date: February 2018	
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 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
2460: *VH-3/VH-60*	34.435	1.335	1.309	1.310	-	1.310	0.000	0.000	0.000	0.000	0.000	38.389
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).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: VH Executive Helicopter Aircraft Life Management Program	1.335	1.309	1.310	0.000	1.310
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 2018 Plans: Provide government program management and engineering support for efforts associated with the Aircraft Life Management Program ensuring aircraft availability and mission readiness to the VH Executive Helicopters.					
FY 2019 Base Plans: Provide government program management and engineering support for efforts associated with the Aircraft Life Management Program ensuring aircraft availability and mission readiness to the VH Executive Helicopters.					
FY 2019 OCO Plans: N/A					
FY 2018 to FY 2019 Increase/Decrease Statement: There is no significant difference between FY 2018 and FY 2019.					
Accomplishments/Planned Programs Subtotals	1.335	1.309	1.310	0.000	1.310

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• APN/056600: *Executive Helicopters Series*	63.754	38.787	23.566	-	23.566	8.930	28.795	60.897	77.239	Continuing	Continuing

Remarks

Results of the Aircraft Life Management Program trade studies and risk reduction efforts will lead to modifications to be addressed through the program's Obsolescence Management Program and VH Comm Suite Upgrade Operational Safety and Improvement Programs as directed by the Deputy Secretary of Defense.

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.

E. Performance Metrics

Completion of VH Executive Helicopter Aircraft Life Management Program efforts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
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 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 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	-
		Subtotal	19.914	0.000		0.000		0.000		-		0.000	0.000	19.914	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation-WBLoS	WR	NAWCAD : Patuxent River, MD	1.875	0.227	Nov 2016	0.299	Nov 2017	0.304	Nov 2018	-		0.304	0.000	2.705	-
		Subtotal	1.875	0.227		0.299		0.304		-		0.304	0.000	2.705	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWCAD : Patuxent River, MD	9.493	0.000	Nov 2016	0.000	Nov 2017	0.000	Nov 2018	-		0.000	0.000	9.493	-
Program Management Support	WR	NAWCAD : Patuxent River, MD	2.208	1.026	Nov 2016	0.960	Nov 2017	0.958	Nov 2018	-		0.958	0.000	5.152	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
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 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering	SS/CPFF	NAVSEA : Washington Navy Yard, DC	0.600	0.030	Nov 2016	0.020	Nov 2017	0.020	Nov 2018	-		0.020	0.000	0.670	0.671
Travel	Various	Various : Various	0.345	0.052	Oct 2016	0.030	Oct 2017	0.028	Oct 2018	-		0.028	0.000	0.455	-
		Subtotal	12.646	1.108		1.010		1.006		-		1.006	0.000	15.770	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	34.435	1.335		1.309		1.310		-		1.310	0.000	38.389	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 2460 / *VH-3/VH-60*

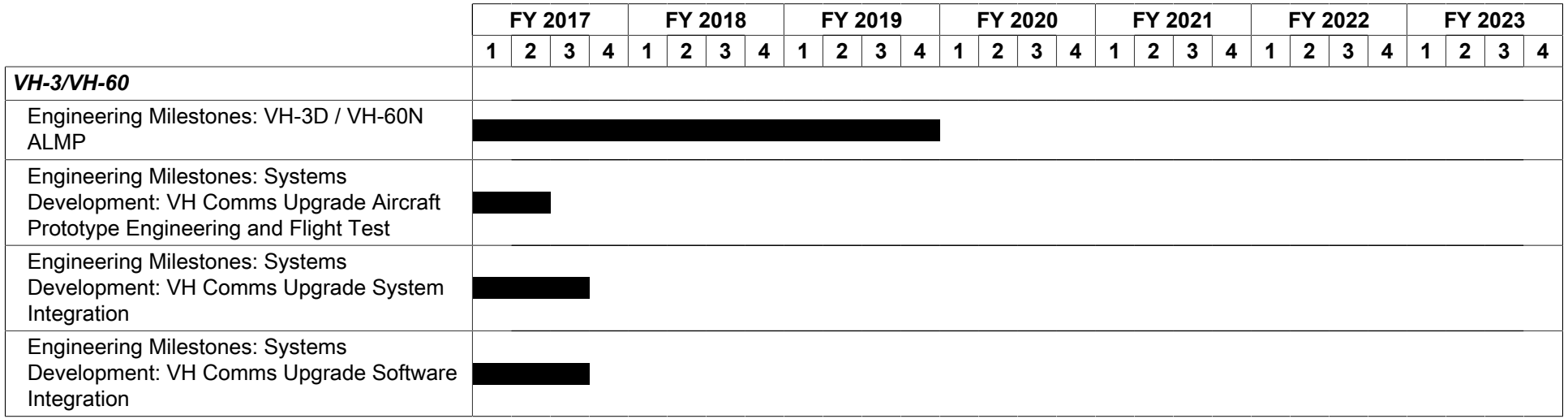


Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604212N / *Other Helicopter Development*	**Project (Number/Name)** 2460 / *VH-3/VH-60*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
VH-3/VH-60				
Engineering Milestones: VH-3D / VH-60N ALMP	1	2017	4	2019
Engineering Milestones: Systems Development: VH Comms Upgrade Aircraft Prototype Engineering and Flight Test	1	2017	2	2017
Engineering Milestones: Systems Development: VH Comms Upgrade System Integration	1	2017	3	2017
Engineering Milestones: Systems Development: VH Comms Upgrade Software Integration	1	2017	3	2017

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3406: *Attack and Utility Replacement Aircraft*	0.000	0.000	7.977	13.849	-	13.849	17.898	43.693	133.391	145.663	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Future Vertical Lift (FVL) is a Joint Department initiative to address vertical lift capability requirements and determine feasible and affordable solutions in support of the Joint Warfighter. The FVL Capability Set 3 (CS3) program, led by the Department of the Army, will develop and field a replacement for US Army and USMC aircraft with a more capable, maintainable, and reliable rotorcraft to meet the needs of the services. FVL will provide unmatched strategic, operational, and tactical agility to perform a multitude of missions currently unachievable by any conventionally configured rotorcraft. FVL will be a force multiplier with superior performance, payload, survivability, agility, endurance, and reliability that enables warfighters to win in a complex world. FVL offers revolutionary operational opportunities over current Vertical Take Off Landing (VTOL) aircraft and will field by 2031.

The Marine Corps FVL requirements emphasize range and speed similar to the MV-22. FVL will increase the Marine Air Ground Task Force's (MAGTF) capacity of long-range fires. FVL 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, pumps, 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 system level software, the operating environment, and the on-aircraft infrastructure to facilitate integration of all subsystems and platform.

FVL is a new start in FY2018.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Future Vertical Lift	0.000	7.977	13.849	0.000	13.849
Articles:	-	-	-	-	-
FY 2018 Plans: Provide initial support for Future Vertical Lift (FVL) Analysis of Alternatives (AoA) to assess the technical feasibility, technical risk, and affordability of potential strategic solutions with the intent to develop the next generation of rotary wing aircraft supporting new Vertical Take Off Landing capabilities common with the US Army. Tasks to be performed include but are not limited to: AoA support, Acquisition Program Management					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
functions, Engineering modeling and analysis, TEMP development, System Specification and 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, John Hopkins APL, various industry partners. Initial FVL contract awards for FY18 could be contract support services, academia, or industry quick turn studies. All contract actions will be smaller scale efforts to support the overall initial AoA effort.					
FY 2019 Base Plans: FY 2019 BASE PLANS WEAPONS AND SENSORS TESTING AND INTEGRATION: Continue initial support for Future Vertical Lift (FVL) Analysis of Alternatives (AoA) to assess the technical feasibility, technical risk, and affordability of potential strategic solutions with the intent to develop the next generation of rotary wing aircraft supporting new Vertical Take Off Landing capabilities common with the US Army. Tasks to be performed include but are not limited to: AoA support, Acquisition Program Management functions, Engineering modeling and analysis, TEMP development, System Specification and 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, John Hopkins APL, and various industry partners. Continued FVL contract awards for FY19 could be contract support services, academia, or industry quick turn studies. All contract actions will be smaller scale efforts to support the overall initial AoA effort.					
FY 2019 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase of $5.872M from FY 2018 to FY 2019 is due to Future Vertical Lift (FVL) requirements for the Marine Air Ground Task Force's (MAGTF).					
Accomplishments/Planned Programs Subtotals	0.000	7.977	13.849	0.000	13.849

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Army plans to initiate an Analysis of Alternatives (AoA) in the 3rd Quarter FY 2017 to begin the assessment of the technical feasibility, operational feasibility, technical risk, and affordability of potential solutions. The AoA will take advantage of previous studies, ongoing Advanced Technology Development Science & Technology (S&T) projects, and input from Government, Industry and Academia. The results of the AoA and Technology Readiness Assessments will be used to assist in determining if a Milestone A or Milestone B entry is appropriate. Once the appropriate Milestone entry point has been determined, the program will enter at the appropriate Milestone with an appropriate RFP Release. The program will complete development and testing of the most cost effective system before entering the Production and Deployment phase in the FY2031 timeframe.

E. Performance Metrics

A studies and analysis contract will be awarded 2Q FY 2018.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
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 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	TBD : TBD	0.000	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		0.000		-		0.000	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	TBD : TBD	0.000	0.000		4.850	Mar 2018	3.740	Jan 2019	-		3.740	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		4.850		3.740		-		3.740	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test and Evaluation	WR	TBD : TBD	0.000	0.000		0.575	Mar 2018	0.587	Nov 2018	-		0.587	Continuing	Continuing	Continuing
Studies and Anaylsis	C/CPFF	TBD : TBD	0.000	0.000		0.175	Mar 2018	6.929	Jan 2019	-		6.929	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.750		7.516		-		7.516	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPIF	Various : Various	0.000	0.000		0.100	Mar 2018	0.000	Nov 2018	-		0.000	Continuing	Continuing	Continuing
Program Management Support	TBD	Various : Various	0.000	0.000		2.072	Mar 2018	2.113	Nov 2018	-		2.113	Continuing	Continuing	Continuing
Travel	WR	NAVAIR : Patuxent River, MD	0.000	0.000		0.205	Mar 2018	0.480	Oct 2018	-		0.480	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
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*

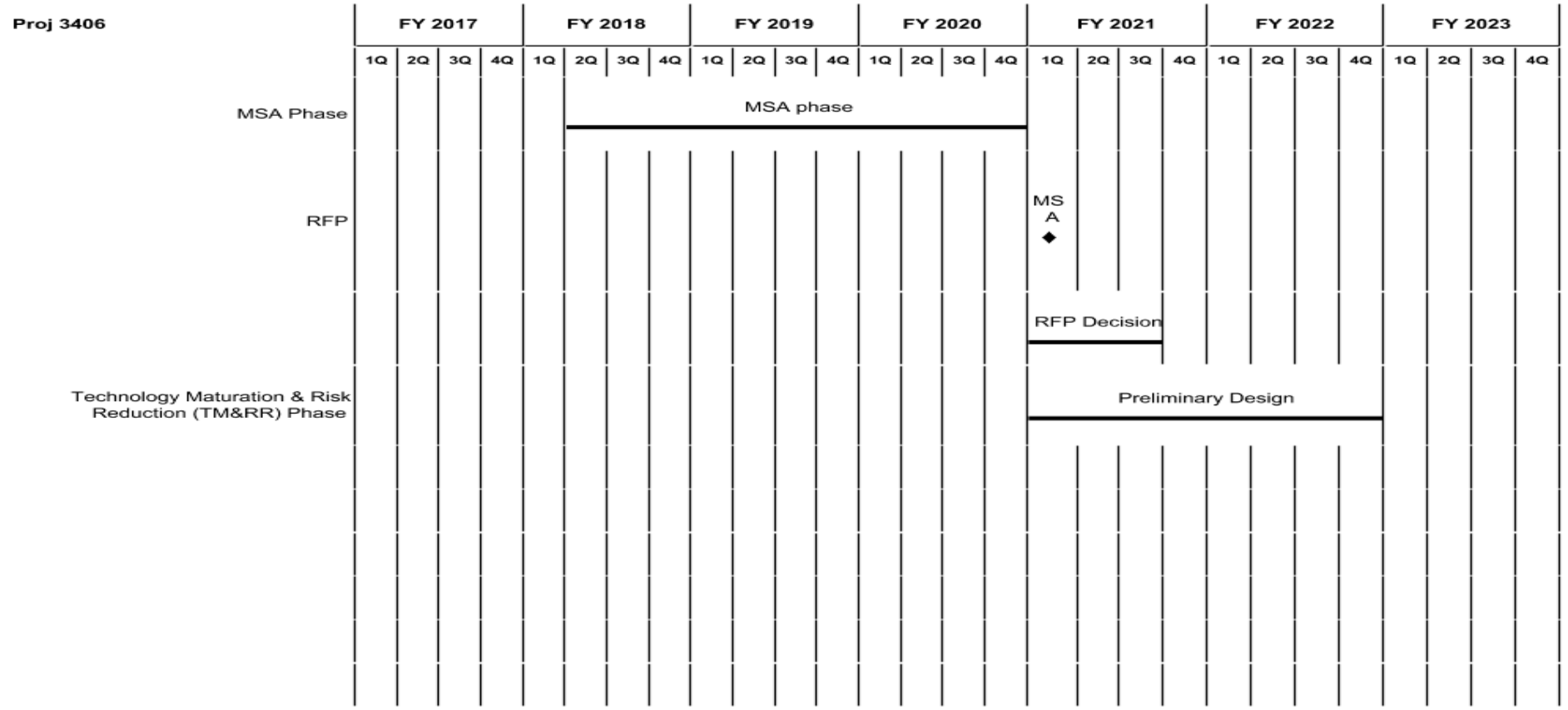
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	0.000	0.000		2.377		2.593		-		2.593	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		7.977		13.849		-		13.849	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
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*



2019DON - 0604212N - 3406

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
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**
Proj 3406				
MSA Phase: Capability Refinement	2	2018	4	2020
RFP: Milestone A	1	2021	1	2021
RFP: Request for Proposal	1	2021	3	2021
Technology Maturation & Risk Reduction (TM&RR) Phase: TM&RR	1	2021	4	2022