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

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0605229F / HH-60W
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	52.314	0.000	52.314	33.278	99.504	86.096	87.795	Continuing	Continuing
670001: <i>HH-60W Modernization Development</i>	-	0.000	0.000	52.314	0.000	52.314	33.278	99.504	86.096	87.795	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note
 This program, BA 7, PE 0605229F, project 670001, HH-60W MUOS Capability, is a new start.

In FY 2025, PE 0605229F, HH-60W, Project 654364, Combat Rescue Helicopter, Budget Activity 5, System Development & Demonstration (SDD) efforts will transfer to PE 0605229F, HH-60W, Project 670001, HH-60W Modernization Development, Budget Activity 7, Operational Systems Development to transition the HH-60W program from production to post-production capability upgrades and sustainment.

A. Mission Description and Budget Item Justification

The HH-60W Jolly Green is the US Air Force's Combat Rescue Helicopter (CRH). In FY 2023, a new operational USAF CRH had successfully completed a rescue operation in the AFROCOM theater. CRH, now in Full Rate Production (FRP) provides the modernization and upgrade to the legacy HH-60G Pave Hawk helicopter. CRH modernization funding is crucial to ensure the CRH fleet can support the new theater and revitalize support for not only the crew but the rescues they save. RDT&E efforts include but are not limited to Mobile User Objective System, Degraded Visual Environment, Global Positioning System Anti-Jam System, and the Delivery Order 1 Agile Software Program.

Mobile User Objective System (MUOS) provides narrow band military BLOS communication capability with improved availability for voice, data and video communications and is the DoD directed replacement to UHF SATCOM. With MUOS, The CRH will be compatible with future satellite communication standards. MUOS adds data capability while maintaining existing voice functions, a key enabler to distributed operations. Inability to communicate BLOS disrupts coordinating Personnel Recovery and Combat Search and Rescue missions. Due to the expeditionary nature of combat rescue missions, satellite communication is often the sole means of maintaining connection to command-and-control infrastructure.

Degraded Visual Environment (DVE) mishaps accounts for 31% of all HH-60G mishaps since 2001. A DVE system will significantly reduce operational risk in all CRH regimes of flight, especially en-route navigation and terminal area operations in unprepared operational locations where the combat rescue mission is performed. A DVE material and technical solution to the DOD's #1 flight rotary wing flight risk, reduces operator workload, increases ability to operate in limited visibility conditions, and reduces mishaps saving lives and equipment.

Legacy CRH Global Positioning System (GPS) equipment is vulnerable to exploitation. Planned GPS Anti-Jamming (GPS-AJ) modifications will enable CSAR operations in contested environments and areas with high jamming risk, especially where no other means of navigation exists, greatly reducing risk and significantly increasing

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combat capability in multiple theaters. Hardware modifications include the addition of more jam resistant controlled reception pattern antennas (CRPA) in addition to existing CRH Fixed Reception Pattern Antennas along with upgraded antenna electronics units (AEU) and associated software.

Delivery Order (DO) 1 Agile Software Program will be the vehicle to perform software capability and fixes to the CRH fleet. Currently, the CRH fleet does not have a reoccurring process to enable yearly development, test and fielding of Deficiency Reports (DRs) to the operational fleet. DO 1 will not only give the warfighter the ability to rapidly fix these aging issues, but to also implement new software capability at the direction of the MAJCOM. This Program shall be reoccurring to accomplish 5 years of agile support to the fleet. Requirement: ACC designated this critical enable to accomplish any other mandates or specific requirements.

The CRH program funding also supports innovation activities to include testing, integrated master plans, studies, analyses, requirements definition, and quick-reaction capability prototypes/demonstrations to accelerate planning for technology transition, technology insertion and future acquisition programs. Planned work includes program testing and development, effects testing, development of baseline integrated master plans and mission planning system analysis.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, and 0606398F. In FY 2023, \$0.000 million was expended for civilian pay expenses in this program element, and in FY 2024, \$0.000 million is forecast for civilian pay expenses in this program element.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	52.314	0.000	52.314
Total Adjustments	0.000	0.000	52.314	0.000	52.314
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	52.314	0.000	52.314

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Change Summary Explanation

FY 2025 funding request increased due to a transfer of efforts from Budget Activity (BA) 5, Systems Development & Demonstration, Program Element (PE) 0605229F, HH-60W, Project 654364, Combat Rescue Helicopter to Budget Activity 7, Operational Systems Development, PE 0605229F, HH-60W, Project 670001, HH-60W Modernization Development. Effort previously funded in BA 5, Program Element 0605229F, HH-60W Project 654364, Combat Rescue Helicopter for \$48.268 million. Funding increased by \$4.046 million from \$48.268 million to \$52.314 million due to post-production capability development and upgrades.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
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Title: HH-60W MUOS Capability	0.000	0.000	4.550
Description: Integration and test for MUOS-capable radios on Block 45 aircraft in the COMM 3 position with Beyond Line-of-Sight (BLOS) Integrated Waveform (IW) and LOS SATURN capability with HAVE QUICK II backward compatibility.			
FY 2024 Plans: N/A			
FY 2025 Plans: Development and integration efforts for MUOS-capable radios on Block 45 aircraft in the COMM 3 position.			
FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased due to ramp up of initial development and integration efforts.			

Title: HH-60W Global Positioning System Anti-Jam (GPS-AJ)	0.000	0.000	5.511
Description: Planned GPS Anti-Jamming (GPS-AJ) modifications will enable CSAR operations in contested environments and areas with high jamming risk. Hardware modifications include the addition of more jam resistant controlled reception pattern antennas (CRPA) in addition to existing HH-60W Fixed Reception Pattern Antennas along with upgraded antenna electronics units (AEU) and associated software. This effort was previously included in Budget Activity 5, Project 654364, Combat Rescue Helicopter, Major Thrust Capability Upgrades & Modernization. It is being established as a major thrust to ensure transparency.			
FY 2024 Plans: N/A			
FY 2025 Plans: Research and development activities for GPS-AJ hardware components and software.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

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Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>		R-1 Program Element (Number/Name) PE 0605229F / HH-60W		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
Funding increased due to transfer of efforts from Budget Activity 5, PE 0605229F, HH-60W, Project 654364, Combat Rescue Helicopter efforts to Budget Activity 7, PE 060229F, HH-60W, Project 670001, HH-60W Modernization Development.				
<p>Title: HH-60W Degraded Visual Environment System (DVES)</p> <p>Description: DVE is a critical requirement to lower cost of life for the crew and rescues aboard the CRH. This project will research, test and integrate the best aligned hardware onto the CRH. This effort was previously included in Budget Activity 5, Project 654364, Combat Rescue Helicopter, Major Thrust Capability Upgrades & Modernization. It is being established as a major thrust to ensure transparency.</p> <p>FY 2024 Plans: N/A</p> <p>FY 2025 Plans: Research, develop and integrate the aligned hardware for the CRH requirement.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased because in FY2025, PE 0605229F, HH-60W, Project 654364, Combat Rescue Helicopter efforts were transferred to PE 060229F, HH-60W, Project 670001, HH-60W Modernization Development.</p>		0.000	0.000	8.220
<p>Title: HH-60W Delivery Order (DO) 1 Agile Software Program</p> <p>Description: The vehicle to perform software capability and fixes to the CRH fleet. Development, test and fielding of Deficiency Reports (DRs) to the operational fleet. DO1 is reoccurring to accomplish 5 years of agile support to the fleet. This effort was previously included in Budget Activity 5, Project 654364, Combat Rescue Helicopter, Major Thrust Capability Upgrades & Modernization. It is being established as a major thrust to ensure transparency.</p> <p>FY 2024 Plans: N/A</p> <p>FY 2025 Plans: Perform software capability updates to the fleet, development and testing.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased due to transfer of efforts from Budget Activity 5, PE 0605229F, HH-60W, Project 654364, Combat Rescue Helicopter efforts to Budget Activity 7, PE 060229F, HH-60W, Project 670001, HH-60W Modernization Development.</p>		0.000	0.000	17.967
<p>Title: HH-60W and Capability Development</p>		0.000	0.000	9.080

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
<p>Description: Develop associated training system and support elements that leverage fielded, non-developmental technologies to recapitalize the HH-60G fleet and other support for Capability Upgrades.</p> <p>FY 2024 Plans: N/A</p> <p>FY 2025 Plans: Development efforts to include but not limited to Failure Modes Effects Testing (FMET) and Baseline Integrated Master Plan (BLIMP).</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased due to transfer of efforts from Budget Activity 5, PE 0605229F, HH-60W, Project 654364, Combat Rescue Helicopter efforts to Budget Activity 7, PE 060229F, HH-60W, Project 670001, HH-60W Modernization Development.</p>			
<p>Title: HH-60W Government Test and Evaluation-Modernization Development</p> <p>Description: Development and operational test for CRH Capability Upgrades. Testing performed by multiple government organizations including the 413th FTS, 704th Test Group, 96th Test Wing</p> <p>FY 2024 Plans: N/A</p> <p>FY 2025 Plans: Perform development and operational testing for MUOS, DVE and GPS-AJ.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: Funding increased due to transfer of efforts from Budget Activity 5, PE 0605229F, HH-60W, Project 654364, Combat Rescue Helicopter efforts to Budget Activity 7, PE 060229F, HH-60W, Project 670001, HH-60W Modernization Development.</p>	0.000	0.000	6.986
Accomplishments/Planned Programs Subtotals	0.000	0.000	52.314

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2023	FY 2024	FY 2025	FY 2025	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
			Base	OCO	Total						
• RDTE 05 0605229F: <i>HH-60W</i>	27.722	48.268	0.000	-	0.000	-	-	-	-	0.000	75.990
• MILCON '0207229F: <i>Combat Rescue Helicopter</i>	24.395	0.000	0.000	-	0.000	-	-	-	-	0.000	24.395

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

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 04 H060WH: <i>Combat Rescue Helicopter</i>	1,205.995	282.533	162.685	-	162.685	54.671	-	-	-	0.000	1,705.884
• APAF 06 H060WH <i>BA06: CRH BA06</i>	119.768	0.000	1.859	-	1.859	2.338	2.397	2.434	2.483	0.000	131.279
• APAF 05 H060WM: <i>HH60W Modifications</i>	3.083	0.000	28.911	-	28.911	68.453	74.007	76.805	78.667	746.417	1,076.343

Remarks

E. Acquisition Strategy

The HH-60W Capability Upgrades program will deliver iterative incremental capability upgrades to the CRH technical baseline based on ACC approved requirements and funding, and collective ACC/Program office R&PC candidate packaging and delivery. Discrete capability releases will involve hardware and software development (which may include integration of pre-existing material solutions), development of product support packages to ensure field supportability, verification of system performance prior to Government acceptance via lab, SIL, and flight testing, fleet retrofit via production cut-ins (when possible) or mod lines to include maintenance of common configuration, and updates to associated training systems to include the WST, OFT, AVDTT, AST, associated spares and support elements/equipment, as well as Type 1 training and course-ware required to perform flight, aircrew, and maintenance training.

The first of the capability modifications are expected to initiate in FY2024 via the current Capability Upgrades Indefinite Delivery, Indefinite Quantity (IDIQ) contract with EMD efforts expected to extend through FY2028. Low-rate initial production and retrofit activities are baselined to occur via the Capability Upgrades IDIQ contract post EMD completion followed execution of separate competitive contracting efforts to address full rate production and fleet retrofit expected to being in FY27-FY28 timeframe. Contracting types will be a mix of Cost Plus Fixed Fee (CPFF), Fixed Price Incentive Fee (FPIF), and Firm Fixed Price (FFP) based on the maturity of capabilities planned for integration and the complexity of said integration activities.

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

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0605229F / HH-60W	Project (Number/Name) 670001 / HH-60W Modernization Development
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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
CRH MUOS Capability	C/FPIF	Sikorsky Aircraft Corp. : Stratford, CT	-	-		-		4.550	Jun 2025	-		4.550	Continuing	Continuing	-
CRH Global Positioning System Anti-Jam (GPS-AJ)	C/FPIF	Sikorsky Aircraft Corp. : Stratford, CT	-	-		-		5.511	Jun 2025	-		5.511	Continuing	Continuing	-
CRH Degraded Visual Environment System (DVES)	C/FPIF	Sikorsky Aircraft Corp. : Stratford, CT	-	-		-		8.220	May 2025	-		8.220	Continuing	Continuing	-
CRH Delivery Order (DO) 1 Agile Software Program	C/FPIF	Sikorsky Aircraft Corp. : Stratford, CT	-	-		-		17.967	Mar 2025	-		17.967	Continuing	Continuing	-
Failure Mode Effects Test (FMET)	C/FPIF	Sikorsky Aircraft Corp. : Stratford, CT	-	-		-		2.765	Apr 2025	-		2.765	Continuing	Continuing	-
Baseline Integrated Master Plan (BLIMP)	C/FPIF	Sikorsky Aircraft Corp. : Stratford, CT	-	-		-		0.900	Mar 2025	-		0.900	Continuing	Continuing	-
Subtotal			-	-		-		39.913		-		39.913	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 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
HH-60W product support related to aircraft development, integration, test articles, trainers and contractor test, including SBIR Tax.	Various	Various : TBD	-	-		-		1.915	Jan 2025	-		1.915	Continuing	Continuing	-
Direct Cite Civ Pay	RO	AFLCMC : WPAFB, OH	-	-		-		3.500	Sep 2025	-		3.500	Continuing	Continuing	-
Subtotal			-	-		-		5.415		-		5.415	Continuing	Continuing	N/A

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

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0605229F / HH-60W	Project (Number/Name) 670001 / HH-60W Modernization Development
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Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
HH-60W planning and testing to support developmental and operational test, live fire test and other weapon system testing and support	PO	413th Test Squadron : Eglin AFB, FL	-	-		-		6.986	Jan 2025	-		6.986	Continuing	Continuing	-
Subtotal			-	-		-		6.986		-		6.986	Continuing	Continuing	N/A
Project Cost Totals			-	-		-		52.314		-		52.314	Continuing	Continuing	N/A

Remarks
 In FY 2025, Budget Activity 5, PE 0605229F, HH-60W, Project 654364, Combat Rescue Helicopter efforts transferred to Budget Activity 7, PE 060229F, HH-60W, Project 670001, HH-60W Modernization Development.

FINANCIAL PERFORMANCE: HH-60W is evaluated against traditional Research and Development (R&D) program expenditure benchmarks. Unlike many traditional R&D programs, however, the HH-60W Engineering and Manufacturing Development (EMD) Phase contract is a Fixed Price Incentive Fee (FPIF) contract with progress payments. Ten (10%) percent of incurred costs are withheld until the end of the contract, when they are liquidated. Mandatory funding obligations and progress payment withholds will cause the program to lag traditional expenditure benchmarks, painting an inaccurate portrait of overall program health.

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Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force		Date: March 2024
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
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

CRH Capability Upgrades Development	
CRH MUOS Capability	
CRH Global Positioning System Anti-Jam (GPS-AJ)	
CRH Degraded Visual Environment System (DVES)	
CRH Delivery Order (DO) 1 Agile Software Program	
Failure Modes Effects Test (FMET)	
Baseline Integrated Master Plan (BLIMP)	
CRH Test and Evaluation	
Air Force Test and Evaluation for Capability Upgrades	

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Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0605229F / HH-60W	Project (Number/Name) 670001 / HH-60W Modernization Development

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
CRH Capability Upgrades Development				
CRH MUOS Capability	3	2025	2	2028
CRH Global Positioning System Anti-Jam (GPS-AJ)	3	2025	2	2028
CRH Degraded Visual Environment System (DVES)	3	2025	2	2028
CRH Delivery Order (DO) 1 Agile Software Program	2	2025	1	2028
Failure Modes Effects Test (FMET)	3	2025	2	2027
Baseline Integrated Master Plan (BLIMP)	2	2025	1	2028
CRH Test and Evaluation				
Air Force Test and Evaluation for Capability Upgrades	2	2025	4	2029

Note

In FY2025, PE 0605229F, HH-60W, Project 654364, Combat Rescue Helicopter efforts were transferred to PE 060229F, HH-60W, Project 670001, HH-60W Modernization Development. Threat Capability is scheduled to begin in FY27.