Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605232A *I Hypersonics EMD*							
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	-	533.520	900.920	538.017	-	538.017	230.232	145.153	149.527	151.021	0.000	2,648.390
HX2: *Hypersonic Weapon (LRHW)*	-	533.520	900.920	538.017	-	538.017	230.232	145.153	149.527	151.021	0.000	2,648.390

A. Mission Description and Budget Item Justification

This funding supports the fielding of critical enabling technologies and capabilities that address near-term, and mid-term threats and is directly aligned to the Army Long Range Precision Fires modernization priority.

This includes the development and prototype fielding of the LRHW to defeat Anti Access/Area Denial (A2/AD) capabilities, suppress adversary Long Range Fires, and engage other high payoff/time critical targets. The Army is working collaboratively with the Navy in the development of the LRHW and conducting Joint Flight Campaign (JFC) tests to evaluate overall system performance with added focus on missile body and payload performance.

The LRHW system consists of the All Up Rounds (AUR) plus Canister (AUR+C) which includes the Common Hypersonic Glide Body (CHGB) with the Navy 34.5 inch booster, the Battery Operations Center (BOC) for command and control (C2), and the Transporter Erector Launcher (TEL). An LRHW Battery contains 8 AUR+C, 1 BOC, and 4 TELs each carrying 2 AUR+C. Additionally, the LRHW will use a modified version of an existing C2 network, the Advanced Field Artillery Tactical Data System (AFATDS).

Continued RDT&E investment is required beyond the initial prototype Battery to meet objective requirements and to maintain overmatch against evolving threats. Through implementation of planned technology insertions, the program will increase capability, upgrade the system to address obsolescence, and upgrade platform, launcher, and weapon control systems updates transition mature technologies from S&T. A robust test plan is also required to validate these developmental changes and provide for Soldier operational testing of new capability.

The total cost of the LRHW Ground Support Equipment (GSE) Middle Tier of Acquisition (MTA) effort is $1,476 million from FY23 to FY28, including RDT&E ($452M) and procurement ($1,025M) of prototype units. The remainder of the LRHW GSE MTA is fully funded across the Future Years Defense Program.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army					Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*		R-1 Program Element (Number/Name) PE 0605232A / *Hypersonics EMD*			
B. Program Change Summary ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**
Previous President's Budget	633.499	900.920	367.153	-	367.153
Current President's Budget	533.520	900.920	538.017	-	538.017
Total Adjustments	-99.979	0.000	170.864	-	170.864
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-76.856	-			
• SBIR/STTR Transfer	-23.123	-			
• Adjustments to Budget Years	-	-	170.864	-	170.864

Change Summary Explanation

Increased funding to address incremental funding for Battery 2 AUR + C (with associated CHGBs), AUR test assets for future developmental and operational test of technology insertions, test planning and execution due to updated cost position.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605232A / *Hypersonics EMD*	Project (Number/Name) HX2 / *Hypersonic Weapon (LRHW)*	

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
HX2: *Hypersonic Weapon (LRHW)*	-	533.520	900.920	538.017	-	538.017	230.232	145.153	149.527	151.021	0.000	2,648.390
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding supports the fielding of critical enabling technologies and capabilities that address near-term, and mid-term threats and is directly aligned to the Army Long Range Precision Fires modernization priority.

This includes the development and prototype fielding of the LRHW to defeat Anti Access/Area Denial (A2/AD) capabilities, suppress adversary Long Range Fires, and engage other high payoff/time critical targets. The Army is working collaboratively with the Navy in the development of the LRHW and conducting Joint Flight Campaign (JFC) tests to evaluate overall system performance with added focus on missile body and payload performance.

The LRHW system consists of the All Up Rounds (AUR) plus Canister (AUR+C) which includes the Common Hypersonic Glide Body (CHGB) with the Navy 34.5 inch booster, the Battery Operations Center (BOC) for command and control (C2), and the Transporter Erector Launcher (TEL). An LRHW Battery contains 8 AUR+C, 1 BOC, and 4 TELs each carrying 2 AUR+C. Additionally, the LRHW will use a modified version of an existing C2 network, the Advanced Field Artillery Tactical Data System (AFATDS).

Continued RDT&E investment is required beyond the initial prototype Battery to meet objective requirements and to maintain overmatch against evolving threats. Through implementation of planned technology insertions, the program will increase capability, upgrade the system to address obsolescence, and upgrade platform, launcher, and weapon control systems updates transition mature technologies from S&T. A robust test plan is also required to validate these developmental changes and provide for Soldier operational testing of new capability.

The total cost of the LRHW Ground Support Equipment (GSE) Middle Tier of Acquisition (MTA) effort is $1,476 million from FY23 to FY28, including RDT&E ($452M) and procurement ($1,025M) of prototype units. The remainder of the LRHW GSE MTA is fully funded across the Future Years Defense Program.

FY 2025 Base funding in the amount of $538.017M provides for incremental funding of Battery 2 AUR+C and AUR+C test assets for future test events, test activities, and integration of Technology Insertions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Long Range Hypersonic Weapon	432.757	-	-
Description: Funding is provided for planning, prototype manufacturing, testing and delivery of the Long Range Hypersonic Weapon and consists of four lines of effort:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605232A / *Hypersonics EMD*	**Project (Number/Name)** HX2 / *Hypersonic Weapon (LRHW)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
CHGB with Thermal Protection System (TPS) Development, purchase of hardware, integration, assembly, test and delivery of the Common Hypersonic Glide Body (CHGB) system for the All Up Round plus Canister (AUR+C). Remain technologically capable to support CHGB production for requiring services. All Up Round plus Canister (AUR+C) Technology development, purchase of hardware, integration, assembly, test and delivery of the All Up Round plus Canister (AUR +C). Ground Support Equipment (GSE) Provides for planning and integration efforts for LRHW GSE, LRHW technology development and deployment, and additional training development (enhances existing and incorporates detailed operator and maintainer skills). Designs training aid devices, simulations, and simulator in accordance with the system training plan. Develops the overall Systems Integration and training for the All Up Round plus Canister (AUR+C) for the LRHW program. Test and Evaluation Test and evaluation includes test planning, execution and analysis of Joint Flight Campaigns (JFC) and Army operational and developmental tests. Also provides required support for environmental testing.			
Title: All Up Round and Canister (AUR+C)	-	354.740	348.667
Description: All Up Round plus Canister (AUR+C) Technology development, purchase of hardware, integration, assembly, test and delivery of the All Up Round plus Canister (AUR +C). ***FY 2024 Plans:*** FY 2024 Base provides incremental funding for AUR+C Inert Training canisters and begins delivery of first articles. Continues incremental funding of Battery 2 (BTY2) AUR+C basic load tactical rounds and AUR+C tactical reload rounds for BTY1 and BTY2. Continues incremental funding of test/training/certification rounds for Joint Flight Campaign #5 (JFC5) and JFC6 events. Begins incremental funding of test/training/certification rounds for JFC7. Provides for prime contractor support of test planning and execution. Purchases spare AUR+C subsystems and assemblies in support of the LRHW Life Cycle Sustainment program. Purchases AUR+C Simulators for missile-in-the-loop future technology development and integration. ***FY 2025 Plans:*** FY 2025 AUR+C funding delivers AUR+C Inert Training canisters. Continues incremental funding for and begins delivery of AUR +C basic load tactical rounds. Continues incremental funding for tactical reload rounds. Continues incremental funding for and			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605232A / *Hypersonics EMD*	**Project (Number/Name)** HX2 / *Hypersonic Weapon (LRHW)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
begins delivery of Joint Flight Campaign test/training/certification rounds. Provides for prime contractor support of test planning and execution. Continues incremental funding for spare AUR+C components, subsystems and assemblies in support of the LRHW Life Cycle Sustainment program ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease from FY24 to FY25 is due lower quantities of RDTE funded work in progress AURs in FY25 and transition of Battery 3 basic tactical rounds and reloads to Missile Procurement, Army (MIPA) beginning in FY25.			
Title: Common Hypersonic Glide Body (CHGB) ***Description:*** CHGB with TPS Development, purchase of hardware, integration, assembly, test and delivery of the Common Hypersonic Glide Body (CHGB) system for the All Up Round plus Canister (AUR+C). Remain technologically capable to support CHGB production for requiring services. ***FY 2024 Plans:*** FY 2024 Base funds continue the development of the LRHW CHGB. Supports further development and demonstration of LRHW system components and training; prime contractor support of Ground and Flight (Joint Flight Campaign) testing and overall system integration of Technology Insertions. Incrementally funds CHGBs for basic load and reload AUR+C and test/training/certification AUR+Cs. Enhances training in accordance with system training plan. ***FY 2025 Plans:*** FY 2025 Base funds continue the development of the LRHW CHGB. Begins deliveries of CHGB to complete AUR+C assembly and integration of basic load tactical and reload rounds. Supports further development and demonstration of LRHW system components and training; prime contractor support of Joint Flight Campaign testing and overall system integration of Technology Insertions. Incrementally funds CHGBs for basic load and reload AUR+C and test/training/certification AUR+Cs. Enhances training in accordance with system training plan. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease from FY24 to FY25 is due to completing material component purchases of RDTE funded CHGBs in FY24 and transition of Battery 3 basic tactical rounds and reloads to MIPA beginning in FY25.	-	358.680	79.356
Title: Ground Support Equipment (GSE) ***Description:*** Provides for planning and integration efforts for LRHW GSE, LRHW technology development and deployment, and additional training development (enhances existing and incorporates detailed operator and maintainer skills). Designs training aid devices, simulations, and simulator in accordance with the system training plan. Develops the overall Systems Integration and training for the All Up Round plus Canister (AUR+C) for the LRHW program.	-	5.930	17.327

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605232A / *Hypersonics EMD*	**Project (Number/Name)** HX2 / *Hypersonic Weapon (LRHW)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: FY 2024 Base funds continue the development of the LRHW battery GSE. Supports further development and demonstration of LRHW system components, to include training enhancements and prime contractor support for Ground and Flight test planning and execution. This funding also supports the operational maintainability of fielded equipment and implements changes to GSE resulting from test activities. ***FY 2025 Plans:*** FY 2025 Base funds continue the development of the LRHW battery GSE. Supports further development and demonstration of LRHW system components, to include training enhancements and prime contractor support for Ground and Flight test planning and execution. This funding also supports the operational maintainability of fielded equipment and implements changes to GSE resulting from test activities. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase from FY24 to FY25 is due to increased GSE software development costs associated with integrating technology insertion changes into the command and control software.			
Title: Test and Evaluation ***Description:*** Test and Evaluation Test and evaluation includes test planning, execution and analysis of Joint Flight Campaigns (JFC) and Army operational and developmental tests. Also provides required support for environmental testing. ***FY 2024 Plans:*** FY 2024 Base funds continue the testing cycle with Joint Flight Campaigns (JFC) 5. JFC-5 requirements include the final planning, data collection infrastructure, and full execution of the test to include soldier TDY and LRHW system transportation costs. ***FY 2025 Plans:*** FY 2025 Base funds continue the testing cycle with Joint Flight Campaigns (JFC) 6 requirements and full execution of the test to include solider TDY, LRHW system transportation costs, and developmental testing. JFC-6 requirements include the final planning and data collection infrastructure. Developmental testing includes: Cyber Table Tops, Cyber Vulnerability Penetration Assessment Planning, Electromagnetic Environmental Effects (E3) planning, execution and reporting. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease from FY24 to FY25 is due to a reduction in estimated test costs based on incorporating actual costs from previous test events into this budget estimate.	-	62.380	35.386
Title: System Engineering/Program Management	100.763	119.190	57.281

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605232A / *Hypersonics EMD*	**Project (Number/Name)** HX2 / *Hypersonic Weapon (LRHW)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: Includes the Government PM's office (civilian, SETA, and matrix personnel) and OGAs to support RDT&E efforts. This encompasses overall planning, direction, and control of the definition, development, and production of the system/program, including functions of logistics engineering and integrated logistics support. ***FY 2024 Plans:*** FY 2024 supports further analysis and assessments for development and demonstration of LRHW system components and training. Continues logistics analysis required for material release and sustainment and supports continued integration of Technical Insertions (TIs). ***FY 2025 Plans:*** FY 2025 supports further analysis and assessments for development and demonstration of LRHW system components and training. Continues logistics analysis required for material release and sustainment and supports continued integration of Technical Insertions (TIs). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease from FY24 to FY25 is due to a reduction in the technology insertion integration efforts as the design is implemented into prototype hardware contracts and due to a realignment of Program Management costs from RDTE to MIPA for the procurement of Battery 3 AUR+C in FY25.			
Accomplishments/Planned Programs Subtotals	533.520	900.920	538.017

C. Other Program Funding Summary ($ in Millions)

Line Item	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
• 0604182A: *Hypersonics*	309.068	43.435	0.000	-	0.000	-	-	-	-	0.000	352.503
• C72111: *LONG-RANGE HYPERSONIC WEAPON (LRHW)*	249.285	156.821	744.178	-	744.178	725.017	381.575	295.676	298.633	Continuing	Continuing

Remarks

D. Acquisition Strategy

Following the initial delivery of the first Long Range Hypersonic Weapons battery by the Rapid Capabilities and Critical Technologies Office (RCCTO), the Army will field two additional LRHW batteries in FY 2025 and FY 2027. System acquisition management will transition from RCCTO to Program Executive Office, Missiles and Space across FY 2023 and FY 2024. The acquisition authority for Batteries 2 and 3 has already transferred to PEO MS with the Acquisition Decision Memorandum in 4Q FY23 and transition will be fully completed when RCCTO delivers Battery 1 AURs and funds Battery 1 Contractor Logistics Support in FY 2024.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605232A / *Hypersonics EMD*	**Project (Number/Name)** HX2 / *Hypersonic Weapon (LRHW)*

The Army Acquisition Executive (AAE) approved entry into the Middle Tier of Acquisition Rapid Fielding pathway for the GSE elements of the LRHW system in 4Q FY23. The approved GSE MTA program includes procurement of LRHW Batteries 2 and 3 GSE, conducting developmental and operational test events to prove out the design and ability of soldiers to operate the equipment in an operational environment, upgrade GSE software, and to integrate into planned technical insertions (TIs), which enhance capability, into the GSE. The GSE for Batteries 2 and 3 will be procured with Missile Procurement, Army funds on a FAR-based contract awarded in FY 2023. RDT&E funding in this line will support testing and integrating TIs.

The AAE also approved procuring AURs from the Navy, to include the CHGB and TPS. Funding in this RDT&E line will be utilized to deliver Battery 2 tactical basic load and reload AUR+Cs, Battery 1 tactical reload AUR+C, and AUR+C for operational and developmental test. It will also fund TI integration into the CHGB and AUR and provide software improvements. CHGBs are provided as Government Furnished Equipment to the Navy Prompt Strike AUR contracts through an Army sole source Other Transaction Authority (OTA) agreement. This OTA will be replaced in FY2024 with a FAR-based contract to be novated to Navy management in FY 2025.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605232A / *Hypersonics EMD*	Project (Number/Name) HX2 / *Hypersonic Weapon (LRHW)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LRHW Program Management and Operations Support	Various	Various : Various	5.484	8.430	Dec 2022	50.680	Oct 2023	19.489	Oct 2024	-		19.489	Continuing	Continuing	-
AUR+C: OGA	Various	Project Office Support : Huntsville, AL	-	1.378	Mar 2023	2.200	Jan 2024	4.566	Jan 2025	-		4.566	0.000	8.144	-
CHGB: OGA	Various	Project Office Support : Huntsville, AL	-	14.940	Nov 2022	6.770	Jan 2024	6.962	Jan 2025	-		6.962	0.000	28.672	-
GSE: OGA	Various	Project Office Support : Huntsville, AL	-	9.040	Feb 2023	5.930	Jan 2024	17.327	Jan 2025	-		17.327	0.000	32.297	-
		Subtotal	5.484	33.788		65.580		48.344		-		48.344	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/Various	Various : Various	-	92.332	Feb 2023	68.510	Jan 2024	37.796	Jan 2025	-		37.796	0.000	198.638	-
CHGB: Dynetics Technical Solutions (DTS)	SS/CPFF	Dynetics Technical Solutions : Huntsville, AL	-	64.464	Jan 2023	259.610	Oct 2023	50.076	Oct 2024	-		50.076	0.000	374.150	-
TPS: Dynetics	C/CPFF	Dynetics : Huntsville, AL	-	86.344	Mar 2023	92.300	Dec 2023	22.318	Nov 2024	-		22.318	0.000	200.962	-
AUR+C: Lockheed Martin	SS/ Various	Lockheed Martin : Various	-	243.205	Nov 2022	352.540	Nov 2023	344.097	Nov 2024	-		344.097	0.000	939.842	-
GSE: Lockheed Martin	SS/CPFF	Lockheed Martin : Huntsville, AL	-	10.587	Sep 2023	-		-		-		-	0.000	10.587	-
		Subtotal	-	496.932		772.960		454.287		-		454.287	0.000	1,724.179	N/A

Remarks

Systems Engineering Cost Element includes integration of planned Technology Insertions.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605232A / *Hypersonics EMD*	Project (Number/Name) HX2 / *Hypersonic Weapon (LRHW)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test	MIPR	Various : Various	-	2.800	Dec 2022	58.270	Nov 2023	24.479	Nov 2024	-		24.479	Continuing	Continuing	-
Government Test Support	Various	Various : Huntsville, AL	-	-		4.110	Nov 2023	10.907	Nov 2024	-		10.907	0.000	15.017	-
		Subtotal	-	2.800		62.380		35.386		-		35.386	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.484	533.520		900.920		538.017		-		538.017	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605232A / *Hypersonics EMD*	**Project (Number/Name)** HX2 / *Hypersonic Weapon (LRHW)*

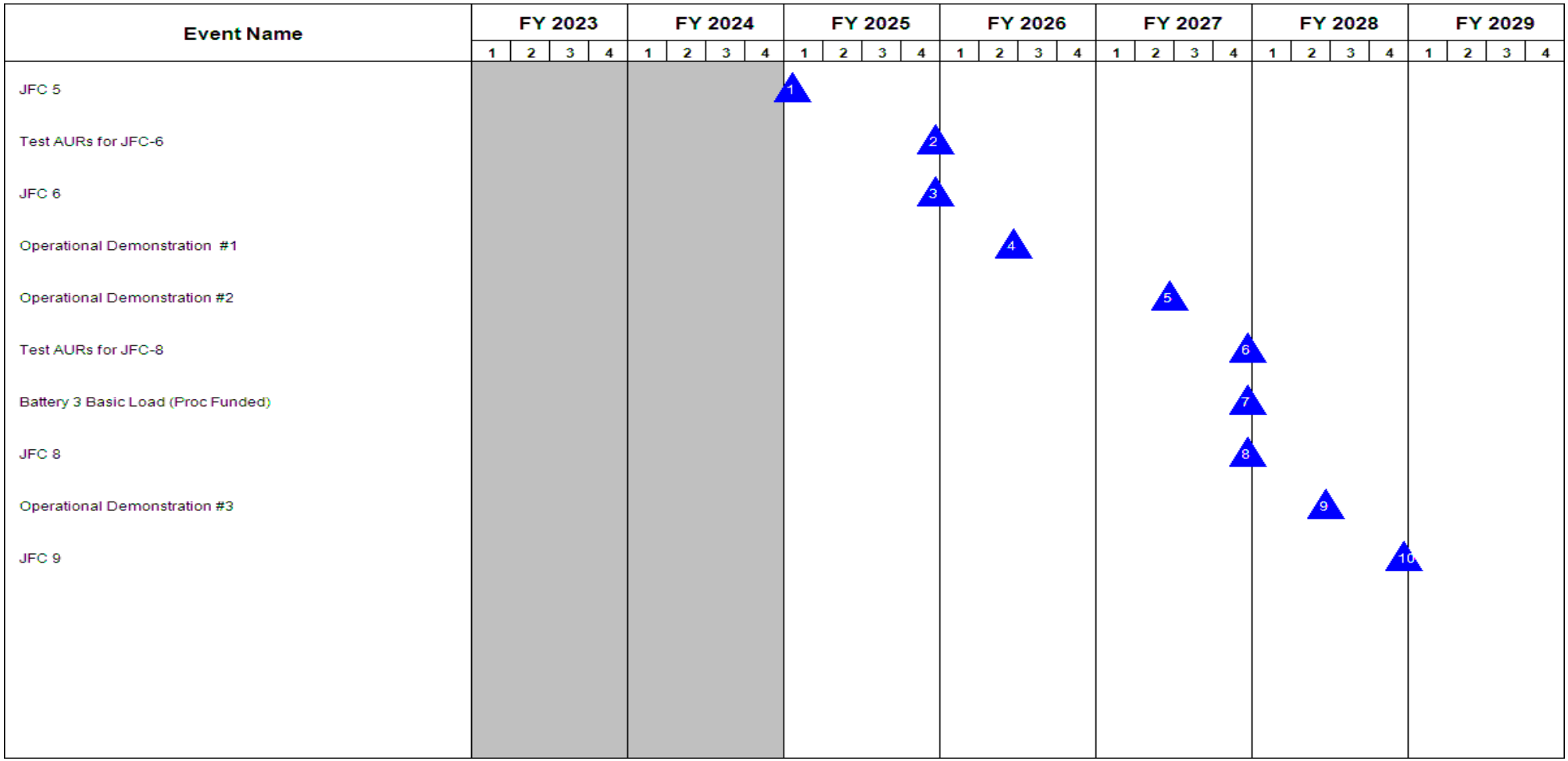

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605232A / *Hypersonics EMD*	**Project (Number/Name)** HX2 / *Hypersonic Weapon (LRHW)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JFC 5	1	2025	1	2025
Test AURs for JFC-6	4	2025	4	2025
JFC 6	4	2025	4	2025
Operational Demonstration #1	2	2026	2	2026
Operational Demonstration #2	2	2027	2	2027
Test AURs for JFC-8	4	2027	4	2027
Battery 3 Basic Load (Proc Funded)	4	2027	4	2027
JFC 8	4	2027	4	2027
Operational Demonstration #3	2	2028	2	2028
JFC 9	4	2028	4	2028