Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army											Date: May 2017	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603801A *I Aviation - Adv Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.000	10.014	14.055	-	14.055	10.909	21.942	55.007	187.511	Continuing	Continuing
B47: *Future Vertical Lift Medium*	-	0.000	10.014	14.055	-	14.055	10.909	21.942	55.007	187.511	Continuing	Continuing

Note

Future Vertical Lift (FVL), Project B47, is a 2017 New Start program with an approved Materiel Development Decision for a Capability Set 3 Aircraft October 2016.

A. Mission Description and Budget Item Justification

Future Vertical Lift (FVL) is an initiative to develop a family of vertical lift aircraft for the United States Armed Forces. FVL was established in 2009 by the Secretary of Defense to focus all Department of Defense (DoD) vertical lift capabilities and technology development, as well as retaining long-term engineering capabilities. In October 2011, the Deputy Secretary of Defense issued the FVL Strategic Plan to outline a joint approach for the next generation vertical lift aircraft for all military services. The Strategic Plan provided a foundation for replacing the current fleet with advanced capability by shaping the development of vertical lift aircraft for the next 25 to 40 years. The development and fielding of FVL will significantly improve vertical lift capabilities providing critical aviation support to the Joint warfighting community. Increases in range, speed, payload, survivability, reliability, and reduced logistical footprint can only be achieved through the FVL approach of developing a new aircraft design. FVL will integrate advancements in technologies and design configurations balanced with appropriate trades to ensure affordability.

PE 0603801A, Project B47, Future Vertical Lift funding provides for the development of a Capability Set 3 aircraft system within the FVL family of systems. FVL Capability Set 3 aircraft will conduct Air Assault, Amphibious Assault, Urban Assault/Security, Attack, Maritime Interdiction, Medical Evacuation (MEDEVAC), Humanitarian Assistance/Disaster Relief (HA/DR), Tactical Resupply, Direct Action (DA), Non-Combatant Evacuation Operation (NEO) and Combat Search and Rescue (CSAR) operations in support of Army, including Army Special Operations Command, Marine Corps and Joint forces. The FVL Capability Set 3 platform will significantly increase speed, range, mobility, and payload over current US Army H-60 and US Marine Corps H-1 aircraft and provide Combatant Commanders with tactical capabilities at greatly increased operational and strategic distances. The FVL Materiel Development Decision was approved in October 2016. FY 2017 funding provides for Analysis of Alternatives (AoA) Modeling, Simulation, and Analysis and Acquisition Strategy development. FY 2018 funding completes development and execution of the AoA, acquisition planning and strategy development, and begins development of the Technology Maturation and Risk Reduction (TMRR) Request for Proposal (RFP) and associated plans and other documentation required to support Milestone A decision and RFP release in FY 2019.

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Army					Date: May 2017
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*		R-1 Program Element (Number/Name) PE 0603801A / *Aviation - Adv Dev*			
B. Program Change Summary ($ in Millions)	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**
Previous President's Budget	0.000	10.014	9.008	-	9.008
Current President's Budget	0.000	10.014	14.055	-	14.055
Total Adjustments	0.000	0.000	5.047	-	5.047
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	0.000	0.000	5.047	-	5.047

Change Summary Explanation

FY18 Program Adjustment in the amount of $5.047M funds FVL to current Program Office Estimate which was approved at MDD.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603801A / *Aviation - Adv Dev*	Project (Number/Name) B47 / *Future Vertical Lift Medium*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
B47: *Future Vertical Lift Medium*	-	0.000	10.014	14.055	-	14.055	10.909	21.942	55.007	187.511	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Future Vertical Lift (FVL), Project B47, is a 2017 New Start program with an approved Materiel Development Decision for a Capability Set 3 Aircraft October 2016.

A. Mission Description and Budget Item Justification

Future Vertical Lift (FVL) is an initiative to develop a family of vertical lift aircraft for the United States Armed Forces. FVL was established in 2009 by the Secretary of Defense to focus all Department of Defense (DoD) vertical lift capabilities and technology development, as well as retaining long-term engineering capabilities. In October 2011, the Deputy Secretary of Defense issued the FVL Strategic Plan to outline a joint approach for the next generation vertical lift aircraft for all military services. The Strategic Plan provided a foundation for replacing the current fleet with advanced capability by shaping the development of vertical lift aircraft for the next 25 to 40 years. The development and fielding of FVL will significantly improve vertical lift capabilities providing critical aviation support to the Joint warfighting community. Increases in range, speed, payload, survivability, reliability, and reduced logistical footprint can only be achieved through the FVL approach of developing a new aircraft design. FVL will integrate advancements in technologies and design configurations balanced with appropriate trades to ensure affordability.

PE 0603801A, Project B47, Future Vertical Lift funding provides for the development of a Capability Set 3 aircraft system within the FVL family of systems. FVL Capability Set 3 aircraft will conduct Air Assault, Amphibious Assault, Urban Assault/Security, Attack, Maritime Interdiction, Medical Evacuation (MEDEVAC), Humanitarian Assistance/Disaster Relief (HA/DR), Tactical Resupply, Direct Action (DA), Non-Combatant Evacuation Operation (NEO) and Combat Search and Rescue (CSAR) operations in support of Army, including Army Special Operations Command, Marine Corps and Joint forces. The FVL Capability Set 3 platform will significantly increase speed, range, mobility, and payload over current US Army H-60 and US Marine Corps H-1 aircraft and provide Combatant Commanders with tactical capabilities at greatly increased operational and strategic distances. The FVL Materiel Development Decision was approved in October 2016. FY 2017 funding provides for Analysis of Alternatives (AoA) Modeling, Simulation, and Analysis and Acquisition Strategy development. FY 2018 funding completes development and execution of the AoA, acquisition planning and strategy development, and begins development of the Technology Maturation and Risk Reduction (TMRR) Request for Proposal (RFP) and associated plans and other documentation required to support Milestone A decision and RFP release in FY 2019.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: Future Vertical Lift (FVL) Analysis of Alternatives	-	4.336	3.107
Description: FVL AoA modeling, simulation, and analysis performed by U.S. Army TRADOC Analysis Center, U.S. Army Materiel Systems Analysis Activity and other supporting agencies.			
FY 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603801A / *Aviation - Adv Dev*	**Project (Number/Name)** B47 / *Future Vertical Lift Medium*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
AoA and Modeling, Simulation, and Analysis, Systems Engineering and Program Management, travel, contractor support, and Program Management administrative cost. ***FY 2018 Plans:*** Complete AoA report documentation and staffing. Note: FY17 allocation between AoA and Program Management activities has changed due to maturation of AoA execution plan.			
Title: Engineering Services / Research Studies ***Description:*** Engineering research, planning, modeling, analyses and reviews supporting the FVL acquisition program. ***FY 2017 Plans:*** Provide technical/engineering support for AoA modeling, simulation, and analysis. Develop FVL systems engineering and product support plans. Begin development of Technology Readiness Assessments of materiel solution concepts. ***FY 2018 Plans:*** Continue to support FVL AoA modeling, simulation and analysis. Complete Systems Engineering Plan, Initial Technology Readiness Assessments, Core Logistics Assessment and Initial Test & Evaluation Master Plan. Support development of FVL TMRR RFP, Capability Development Document and Milestone A documentation.	-	3.386	8.401
Title: Program Management ***Description:*** Oversight and management of FVL acquisition program. ***FY 2017 Plans:*** blank ***FY 2018 Plans:*** Complete acquisition planning and strategy development for FVL Capability Set 3 aircraft. Begin development of TMRR RFP, Source Selection Plan and related documents. Conduct Milestone A planning, documentation, and reviews. Note: FY17 allocation between AoA and Program Management activities has changed due to maturation of AoA execution plan.	-	2.292	2.547
Accomplishments/Planned Programs Subtotals	-	10.014	14.055

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• 0603003A: *Aviation Advanced Technology*	99.542	94.280	160.746	-	160.746	127.723	109.378	110.247	112.356	0.000	814.272

Exhibit R-2A, RDT&E Project Justification: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603801A / *Aviation - Adv Dev*	**Project (Number/Name)** B47 / *Future Vertical Lift Medium*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost

Remarks

PE 0603003A / Aviation Advanced Technology funds the Joint Multi-Role (JMR) Technology Demonstrator (TD) and other Army Science & Technology (S&T) projects to mature and demonstrate manned and unmanned air vehicle technologies to enable Army aviation modernization and reduce risk for FVL. JMR TD is not an FVL prototyping effort nor indicative of an end state FVL performance requirement.

D. Acquisition Strategy

An Analysis of Alternatives (AoA) will be initiated in 3rd Quarter FY 2017 to assess the technical feasibility, operational feasibility, technical risk, and affordability of potential materiel solutions. The AoA will be informed by previous studies, ongoing Advanced Technology Development S&T projects, and input from Government, Industry and Academia. The results of the AoA and Technology Readiness Assessments will be used to support a Milestone A Decision in 2nd Quarter FY 2019 and a Technology Maturation and Risk Reduction (TMRR) RFP Release in 3rd Quarter FY 2019. After a successful Milestone A Decision, the Army will award competitive TMRR contracts to complete preliminary design and risk reduction testing. At the end of TMRR, and after a successful Milestone B Decision, the Army will award an Engineering and Manufacturing Development (EMD) contract to complete development and testing of the most cost effective system before entering the Production and Deployment phase in the FY 2029 timeframe.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Army			Date: May 2017
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603801A / *Aviation - Adv Dev*	Project (Number/Name) B47 / *Future Vertical Lift Medium*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	FVL Program Office : Redstone Arsenal, AL	0.000	-		2.292	May 2017	2.547	Oct 2017	-		2.547	Continuing	Continuing	0.000
		Subtotal	0.000	-		2.292		2.547		-		2.547	-	-	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Analysis of Alternatives (AoA)	TBD	TRADOC Analysis Center : Fort Leavenworth, KS	0.000	-		4.336	May 2017	3.107	Nov 2017	-		3.107	0.000	7.443	0.000
		Subtotal	0.000	-		4.336		3.107		-		3.107	0.000	7.443	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Services / Research Studies - Organic	MIPR	FVL Program Office : Redstone Arsenal AL	0.000	-		1.700	May 2017	5.485	Apr 2018	-		5.485	0.000	7.185	Continuing
Engineering Services / Research Studies - Other	C/FFP	GSA : Atlanta, GA	0.000	-		1.686	Aug 2017	2.916	Dec 2017	-		2.916	0.000	4.602	Continuing
		Subtotal	0.000	-		3.386		8.401		-		8.401	0.000	11.787	-

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		10.014		14.055		-		14.055	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603801A / *Aviation - Adv Dev*	**Project (Number/Name)** B47 / *Future Vertical Lift Medium*

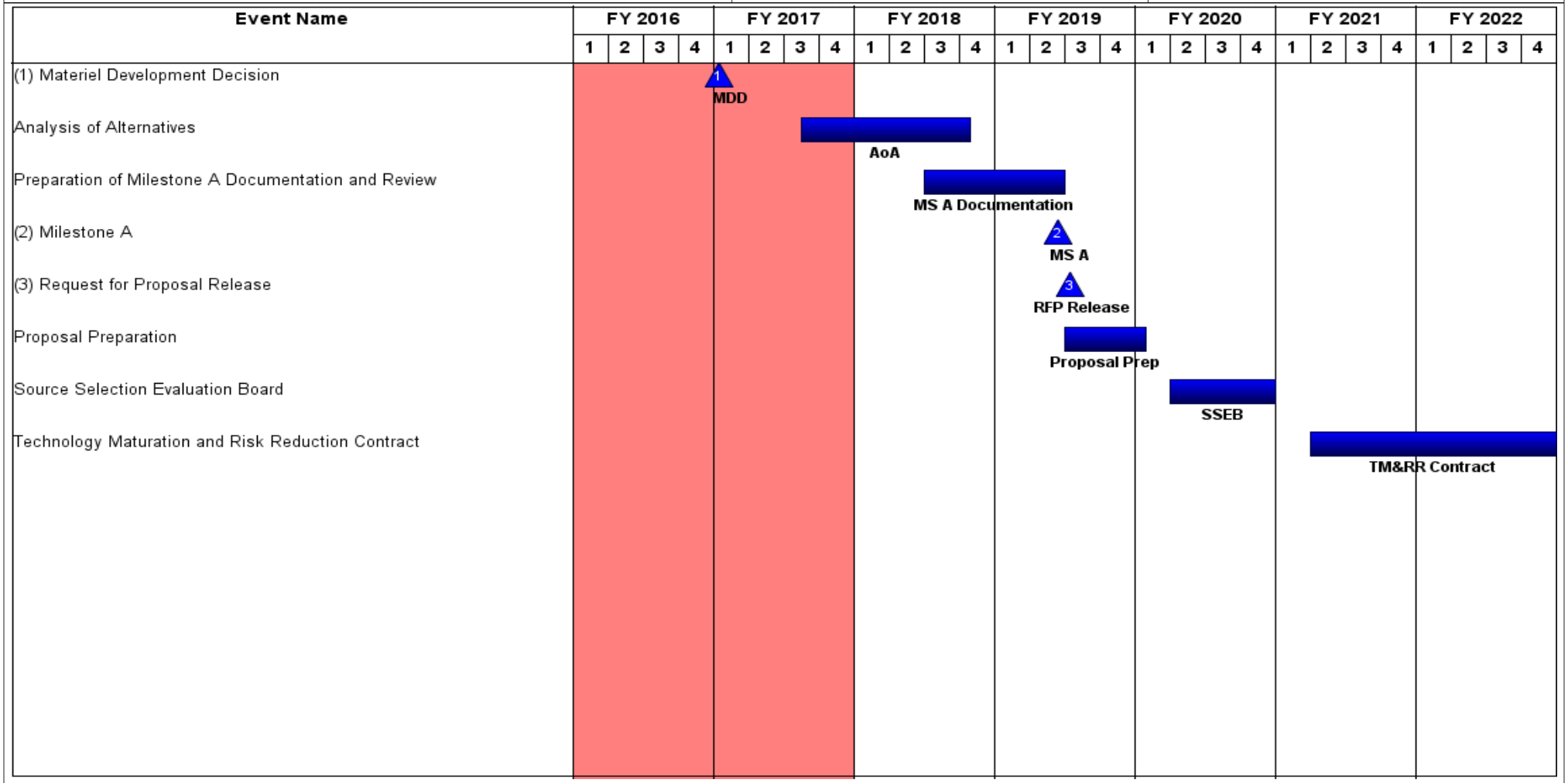

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Army		Date: May 2017
Appropriation/Budget Activity 2040 / 4	**R-1 Program Element (Number/Name)** PE 0603801A / *Aviation - Adv Dev*	**Project (Number/Name)** B47 / *Future Vertical Lift Medium*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Materiel Development Decision	1	2017	1	2017
Analysis of Alternatives	3	2017	4	2018
Preparation of Milestone A Documentation and Review	3	2018	2	2019
Milestone A	2	2019	2	2019
Request for Proposal Release	3	2019	3	2019
Proposal Preparation	3	2019	1	2020
Source Selection Evaluation Board	2	2020	4	2020
Technology Maturation and Risk Reduction Contract	2	2021	1	2024