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**Department of Defense
Fiscal Year (FY) 2022 Budget Estimates**

May 2021



Army

*Justification Book of
Procurement of W&TCV, Army*

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Cost Statement

The following Justification Books were prepared at a cost of \$472,560: Aircraft (ACFT), Missile (MSLS), Weapons & Tracked Combat Vehicles (WTCV), Ammunition (AMMO), Other Procurement Army (OPA) 1 - Tactical & Support Vehicles, Other Procurement Army (OPA) 2 – Communications & Electronics, Other Procurement Army (OPA) 3 & 4 - Other Support Equipment & Spares, Research, Development, Test and Evaluation (RDTE) for: Budget Activity 1, Budget Activity 2, Budget Activity 3, Budget Activity 4, Budget Activity 5A, Budget Activity 5B, Budget Activity 5C, Budget Activity 6, Budget Activity 7, and Budget Activity 8.

PROCUREMENT OF W&TCV, ARMY

Appropriation Language

For construction, procurement, production, and modification of weapons and tracked combat vehicles, equipment, including ordnance, spare parts, and accessories therefore; specialized equipment and training devices; expansion of public and private plants, including the land necessary therefore, for the foregoing purposes, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and government and contractor-owned equipment layaway; and other expenses necessary for the foregoing purposes, \$3,875,893,000 to remain available for obligation until September 30, 2024.

The FY 2022 Overseas Contingency Operations accounted for in the base budget are as follows:

- Direct War Costs accounted for in the Base Budget: \$27,340,000: Direct War costs are those combat or direct combat support costs that will not continue to be expended once combat operations end at major contingency locations.
- Enduring Costs accounted for in the Base Budget: \$28,224,000: Enduring Requirements are enduring in-theater and in CONUS costs that will likely remain after combat operations cease, and have previously been funded in OCO.

FY 2021 includes Division C, Title IX and Division J, Title IV of the Consolidated Appropriations Act, 2021 (P.L. 116-260).

FY 2020 includes Division A, Title IX and X of the Consolidated Appropriations Act, 2020 (P.L. 116-93), Division F, Title IV and V from the Further Consolidated Appropriations Act, 2020 (P.L. 116-94) and the Coronavirus Aid, Relief, and Economic Security Act (P.L. 116-136).

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Department of the Army
FY 2022 President's Budget
Exhibit P-1 FY 2022 President's Budget
Total Obligational Authority
(Dollars in Thousands)

03 May 2021

Appropriation	FY 2020 Total	FY 2021 Total	FY 2022 Total
Procurement of W&TCV, Army	4,917,509	3,627,112	3,875,893
Total Department of the Army	4,917,509	3,627,112	3,875,893

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Department of the Army
 FY 2022 President's Budget
 Exhibit P-1 FY 2022 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

03 May 2021

Appropriation: Procurement of W&TCV, Army

Budget Activity -----	FY 2020 Total -----	FY 2021 Total -----	FY 2022 Total -----
01. Tracked Combat Vehicles	4,712,049	3,380,886	3,550,126
02. Weapons and Other Combat Vehicles	205,460	246,226	325,767
Total Procurement of W&TCV, Army	4,917,509	3,627,112	3,875,893

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Department of the Army
 FY 2022 President's Budget
 Exhibit P-1 FY 2022 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

03 May 2021

Appropriation: 2033A Procurement of W&TCV, Army

Line No	Item Nomenclature	Ident Code	FY 2020 Total		FY 2021 Total		FY 2022 Total		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 01: Tracked Combat Vehicles									

Tracked Combat Vehicles									
1	Armored Multi Purpose Vehicle (AMPV)	A	86	444,797		63,000		104,727	U
2	ASSAULT BREACHER VEHICLE (ABV)	A						16,454	U
3	Mobile Protected Firepower						23	286,977	U
Modification of Tracked Combat Vehicles									
4	Stryker (Mod)	A		397,687					U
5	Stryker Upgrade	A	143	513,858	254	1,164,152	187	1,005,028	U
6	Bradley Program (MOD)	A		415,740		277,259		461,385	U
7	M109 FOV Modifications	A		25,756		26,893		2,534	U
8	Paladin Integrated Management (PIM)	A	96	553,425	31	463,425	25	446,430	U
9	Improved Recovery Vehicle (M88A2 HERCULES)	A		80,146				52,059	U
10	Assault Bridge (Mod)			22,021		5,074		2,136	U
11	Assault Breacher Vehicle	A	6	31,697	4	19,500			U
12	M88 FOV MODS	A		4,500		18,382			U
13	Joint Assault Bridge	A	32	151,123			23	110,773	U
14	M1 Abrams Tank (MOD)	A		325,292		375,107			U
15	Abrams Upgrade Program	A	171	1,746,007	102	968,094	70	981,337	U
16	VEHICLE PROTECTION SYSTEMS (VPS)							80,286	U
Total Tracked Combat Vehicles				4,712,049		3,380,886		3,550,126	

P-122BAS: FY 2022 President's Budget (Total Base Published Version), as of May 3, 2021 at 09:55:12

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Department of the Army
 FY 2022 President's Budget
 Exhibit P-1 FY 2022 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

03 May 2021

Appropriation: 2033A Procurement of W&TCV, Army

Line No	Item Nomenclature	Ident Code	FY 2020 Total		FY 2021 Total		FY 2022 Total		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
Budget Activity 02: Weapons and Other Combat Vehicles									
Weapons & Other Combat Vehicles									
17	M240 Medium Machine Gun (7.62mm)	A		12,500		12,500			U
18	MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON S	A		19,264		22,629		31,623	U
19	Mortar Systems			33,026		20,748		37,485	U
20	XM320 Grenade Launcher Module (GLM)	A		717		5,969		8,666	U
21	Precision Sniper Rifle	A		5,747		8,895		11,040	U
22	COMPACT SEMI-AUTOMATIC SNIPER SYSTEM	A		9,860		999			U
23	Carbine	A		31,514		5,411		4,434	U
24	Next Generation Squad Weapon	A				35,822		97,087	U
25	Common Remotely Operated Weapons Station			28,189		24,534			U
26	Handgun	A		6,422		4,662		4,930	U
Mod of Weapons and Other Combat Veh									
27	MK-19 Grenade Machine Gun MODS			4,477		6,444		13,027	U
28	M777 Mods	A		2,367		9,783		21,976	U
29	M4 Carbine Mods	A		17,595		4,824			U
30	M2 50 Cal Machine Gun MODS	B		6,090				3,612	U
31	M240 Medium Machine Gun MODS	A		6,400		6,385			U
32	Sniper Rifles Modifications			2,426		1,898			U
33	M119 Modifications	A		6,269		2,009			U
34	Mortar Modification	A		1,693		1,689			U

P-122BAS: FY 2022 President's Budget (Total Base Published Version), as of May 3, 2021 at 09:55:12

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Department of the Army
 FY 2022 President's Budget
 Exhibit P-1 FY 2022 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

03 May 2021

Appropriation: 2033A Procurement of W&TCV, Army

Line No	Item Nomenclature	Ident Code	FY 2020		FY 2021		FY 2022		S e c
			Quantity	Cost	Quantity	Cost	Quantity	Cost	
35	Modifications Less Than \$5.0m (WOCV-WTCV)			5,187		2,604			U
	Support Equipment & Facilities								
36	Items Less Than \$5.0m (WOCV-WTCV)			3,066		2,763		1,068	U
37	Production Base Support (WOCV-WTCV)			2,651		65,658		90,819	U
Total Weapons and Other Combat Vehicles				205,460		246,226		325,767	
Total Procurement of W&TCV, Army				4,917,509		3,627,112		3,875,893	

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Line Item Table of Contents (by Appropriation then Line Number)

Appropriation 2033A: Procurement of W&TCV, Army

Line #	BA	BSA	Line Item Number	Line Item Title	Page
1	01	10	2944G80819	Armored Multi Purpose Vehicle (AMPV).....	1
2	01	10	4872G84900	ASSAULT BREACHER VEHICLE (ABV).....	7
3	01	10	7181G80820	Mobile Protected Firepower.....	15
4	01	20	0230GM0100	Stryker (Mod).....	23
5	01	20	0363G85200	Stryker Upgrade.....	24
6	01	20	1678GZ2400	Bradley Program (MOD).....	41
7	01	20	2072GA0400	M109 FOV Modifications.....	59
8	01	20	2073GZ0410	Paladin Integrated Management (PIM).....	61
9	01	20	3700GA0570	Improved Recovery Vehicle (M88A2 HERCULES).....	72
10	01	20	4520GZ3250	Assault Bridge (Mod).....	78
11	01	20	4872G82925	Assault Breacher Vehicle.....	80
12	01	20	5129G80571	M88 FOV MODS.....	82
13	01	20	5225GZ3001	Joint Assault Bridge.....	83
14	01	20	6406GA0700	M1 Abrams Tank (MOD).....	91
15	01	20	6500GA0750	Abrams Upgrade Program.....	93
16	01	20	6652GM1900	VEHICLE PROTECTION SYSTEMS (VPS).....	104

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Appropriation 2033A: Procurement of W&TCV, Army

Line #	BA	BSA	Line Item Number	Line Item Title	Page
17	02	10	2472G13000	M240 Medium Machine Gun (7.62mm).....	111
18	02	10	3736G13101	MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM.....	113
19	02	10	6580G02200	Mortar Systems.....	119
20	02	10	8181G01501	XM320 Grenade Launcher Module (GLM).....	129
21	02	10	8190G01506	Precision Sniper Rifle.....	135
22	02	10	8194G01507	COMPACT SEMI-AUTOMATIC SNIPER SYSTEM.....	140
23	02	10	8201G13501	Carbine.....	142
24	02	10	8205G14510	Next Generation Squad Weapon.....	144
25	02	10	8310G04700	Common Remotely Operated Weapons Station.....	160
26	02	10	8635G15325	Handgun.....	161
27	02	20	3000GB3000	MK-19 Grenade Machine Gun MODS.....	163
28	02	20	3005GZ1700	M777 Mods.....	174
29	02	20	3010GB3007	M4 Carbine Mods.....	183
30	02	20	3015GB4000	M2 50 Cal Machine Gun MODS.....	185
31	02	20	3030GZ1300	M240 Medium Machine Gun MODS.....	187
32	02	20	3181GZ1500	Sniper Rifles Modifications.....	189

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Appropriation 2033A: Procurement of W&TCV, Army

Line #	BA	BSA	Line Item Number	Line Item Title	Page
33	02	20	3640GC0401	M119 Modifications.....	191
34	02	20	7054G02100	Mortar Modification.....	192
35	02	20	9280GC0925	Modifications Less Than \$5.0m (WOCV-WTCV).....	194
36	02	30	1862GL3200	Items Less Than \$5.0m (WOCV-WTCV).....	195
37	02	30	3270GC0050	Production Base Support (WOCV-WTCV).....	197

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Line Item Table of Contents (Alphabetically by Line Item Title)

Line Item Title	Line Item Number	Line #	BA	BSA	Page
ASSAULT BREACHER VEHICLE (ABV)	4872G84900	2	01	10.....	7
Abrams Upgrade Program	6500GA0750	15	01	20.....	93
Armored Multi Purpose Vehicle (AMPV)	2944G80819	1	01	10.....	1
Assault Breacher Vehicle	4872G82925	11	01	20.....	80
Assault Bridge (Mod)	4520GZ3250	10	01	20.....	78
Bradley Program (MOD)	1678GZ2400	6	01	20.....	41
COMPACT SEMI-AUTOMATIC SNIPER SYSTEM	8194G01507	22	02	10.....	140
Carbine	8201G13501	23	02	10.....	142
Common Remotely Operated Weapons Station	8310G04700	25	02	10.....	160
Handgun	8635G15325	26	02	10.....	161
Improved Recovery Vehicle (M88A2 HERCULES)	3700GA0570	9	01	20.....	72
Items Less Than \$5.0m (WOCV-WTCV)	1862GL3200	36	02	30.....	195
Joint Assault Bridge	5225GZ3001	13	01	20.....	83
M1 Abrams Tank (MOD)	6406GA0700	14	01	20.....	91
M109 FOV Modifications	2072GA0400	7	01	20.....	59
M119 Modifications	3640GC0401	33	02	20.....	191
M2 50 Cal Machine Gun MODS	3015GB4000	30	02	20.....	185

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Line Item Title	Line Item Number	Line #	BA	BSA	Page
M240 Medium Machine Gun (7.62mm)	2472G13000	17	02	10.....	111
M240 Medium Machine Gun MODS	3030GZ1300	31	02	20.....	187
M4 Carbine Mods	3010GB3007	29	02	20.....	183
M777 Mods	3005GZ1700	28	02	20.....	174
M88 FOV MODS	5129G80571	12	01	20.....	82
MK-19 Grenade Machine Gun MODS	3000GB3000	27	02	20.....	163
MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM	3736G13101	18	02	10.....	113
Mobile Protected Firepower	7181G80820	3	01	10.....	15
Modifications Less Than \$5.0m (WOCV-WTCV)	9280GC0925	35	02	20.....	194
Mortar Modification	7054G02100	34	02	20.....	192
Mortar Systems	6580G02200	19	02	10.....	119
Next Generation Squad Weapon	8205G14510	24	02	10.....	144
Paladin Integrated Management (PIM)	2073GZ0410	8	01	20.....	61
Precision Sniper Rifle	8190G01506	21	02	10.....	135
Production Base Support (WOCV-WTCV)	3270GC0050	37	02	30.....	197
Sniper Rifles Modifications	3181GZ1500	32	02	20.....	189
Stryker (Mod)	0230GM0100	4	01	20.....	23
Stryker Upgrade	0363G85200	5	01	20.....	24
VEHICLE PROTECTION SYSTEMS (VPS)	6652GM1900	16	01	20.....	104
XM320 Grenade Launcher Module (GLM)	8181G01501	20	02	10.....	129

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Exhibit P-1M, Procurement Programs - Modification Summary
(Listing by Model)

Lookup Matrix by Model

Model:	M2 & M3 Bradley Vehicle Variants	
P-3a Individual Modifications		
Modification Number	Modification Title	Applies to Multiple Models
GZ2400	Bradley Program (MOD)	No

Model:	MK-19 Grenade Machine Gun	
P-3a Individual Modifications		
Modification Number	Modification Title	Applies to Multiple Models
GB3000	MK-19 Grenade Machine Gun MODS	No

Model:	M777A2	
P-3a Individual Modifications		
Modification Number	Modification Title	Applies to Multiple Models
GZ1700	M777 Mods	No

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 Exhibit P-1M, Procurement Programs - Modification Summary
 (Funding for Modifications)

Funding (\$ M)

P-3a Modification Title	PYS	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Exhibit P-3a										
Bradley Program (MOD)	6,207.875	415.740	277.259	461.385	-	461.385	-	-	-	-
MK-19 Grenade Machine Gun MODS	46.435	4.477	6.444	13.027	-	13.027	-	-	-	-
M777 Mods	152.895	2.367	9.783	21.976	-	21.976	-	-	-	-
Totals (Total Obligation Authority)										
Total Obligation Authority	6,407.205	422.584	293.486	496.388	0.000	496.388	0.000	0.000	0.000	0.000

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 10: Tracked Combat Vehicles **P-1 Line Item Number / Title:** 2944G80819 / Armored Multi Purpose Vehicle (AMPV)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0605028A

Line Item MDAP/MAIS Code: 471

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	361	86	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,191.170	444.797	63.000	104.727	-	104.727	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,191.170	444.797	63.000	104.727	-	104.727	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,191.170	444.797	63.000	104.727	-	104.727	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	3,299.640	5,172.058	-	-	-	-	-	-	-	-	-	-

Description:

The Armored Multi-Purpose Vehicle (AMPV) is the materiel solution for replacement of the Army's Armored Personnel Carrier (M113) Family of Vehicles (FoV) within the Armored Brigade Combat Team (ABCT). It will mitigate current and future capability gaps in force protection, mobility, reliability, and interoperability across the Spectrum of Conflict. The AMPV will replace five mission roles currently performed by the M113 FoV by transferring the current M113 Mission Equipment Packages (MEP) to a new Military Vehicle Derivative (MVD) platform.

In total, the AMPV Family of Vehicles will account for approximately 30% of the Armored Bridgade Combat Team's tracked fleet and consists of the following five variants:

1. Mission Command (MCcmd) Vehicle: This platform enables effective mission command planning and execution for both the Tactical Operations Center (TOC) and Tactical Command Vehicle (TAC) versions of the Mission Command Vehicle. It will host current Battle Command Systems, future replacements, and upgrades of hardware and software.
2. Medical Treatment (MT) Vehicle: This platform will provide a protected surgical environment, with adequate lighting and accessible medical equipment. It will provide a capability for immediate medical care for one patient by a medical crew of four.
3. Medical Evacuation (ME) Vehicle: This platform will conduct ambulance type activities and provide casualty evacuation for up to four litter (tactical stretcher) or six ambulatory patients, with a crew of three medical attendants.
4. General Purpose (GP) Vehicle: This platform will operate throughout the battle space by conducting re-supply, maintenance, casualty evacuation, and other tasks within the formation.
5. Mortar Carrier (MC) Vehicle: This platform will provide immediate responsive fire support to conduct fast-paced offensive operations.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army									
Quantity	86	-	-	-	-	-	-	-	-
Total Obligation Authority	444.797	63.000	104.727	-	104.727	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army							Date: May 2021		
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 10: Tracked Combat Vehicles					P-1 Line Item Number / Title: 2944G80819 / Armored Multi Purpose Vehicle (AMPV)				
ID Code (A=Service Ready, B=Not Service Ready): A			Program Elements for Code B Items: N/A			Other Related Program Elements: 0605028A			
Line Item MDAP/MAIS Code: 471									

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Total:	Quantity	86	-	-	-	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	444.797	63.000	104.727	-	104.727	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 10: Tracked Combat Vehicles
P-1 Line Item Number / Title: 2944G80819 / Armored Multi Purpose Vehicle (AMPV)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0605028A

Line Item MDAP/MAIS Code: 471

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	G80819 / Armored Multi Purpose Vehicle (AMPV)	P-5a	A		361 / 1,191.170	86 / 444.797	- / 63.000	- / 104.727	- / -	- / 104.727
P-40	Total Gross/Weapon System Cost				361 / 1,191.170	86 / 444.797	- / 63.000	- / 104.727	- / -	- / 104.727

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY 2022 funding total includes \$104.727 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Base procurement dollars in the amount of \$104.727 million covers government program management efforts, contractor efforts related to current production and production support, and testing/training/fielding efforts from both the government and contractor. Additionally, funding supports user requested system enhancements stemming from the program's test plan. AMPV will mitigate current and future capability gaps in force protection, mobility, reliability, and interoperability across the Spectrum of Conflict.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

In FY 2022, funding in the amount of \$.183 million for manpower was realigned to Operations and Maintenance. Program support costs have been accurately updated to reflect the realignments.

Army Acquisition Objective (AAO): 2897 vehicles

This program supports the Next Generation Combat Vehicles Cross-Functional Team (CFT).

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10	P-1 Line Item Number / Title: 2944G80819 / Armored Multi Purpose Vehicle (AMPV)	Item Number / Title [DODIC]: G80819 / Armored Multi Purpose Vehicle (AMPV)

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
---	------------------------

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (Units in Each)	361	86	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	1,191.170	444.797	63.000	104.727	-	104.727
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	1,191.170	444.797	63.000	104.727	-	104.727
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	1,191.170	444.797	63.000	104.727	-	104.727

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	3,299.640	5,172.058	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
Vehicle Manufacturing - Contractor ^(t)	3,136.722	370	1,160.587	2,817.883	77	216.977	-	-	-	-	-	-	-	-	-	-	-	-
Engineering Change Orders	-	-	-	-	-	1.783	-	-	16.898	-	-	28.900	-	-	-	-	-	28.900
Sys Eng / Prog Mgmt (Government)	-	-	13.319	-	-	17.789	-	-	20.797	-	-	21.552	-	-	-	-	-	21.552
Training Devices	-	-	4.054	-	-	3.972	-	-	5.635	-	-	20.989	-	-	-	-	-	20.989
Total Package Fielding (TPF)	-	-	3.620	-	-	13.926	-	-	1.150	-	-	18.454	-	-	-	-	-	18.454
System Technical Support (STS)	-	-	-	-	-	12.350	-	-	18.520	-	-	14.832	-	-	-	-	-	14.832
Subtotal: Recurring Cost	-	-	1,181.580	-	-	266.797	-	-	63.000	-	-	104.727	-	-	-	-	-	104.727
Non Recurring Cost																		
Other- FY 2021 Rescissions	-	-	9.590	-	-	178.000	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	9.590	-	-	178.000	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Flyaway Cost	-	-	1,191.170	-	-	444.797	-	-	63.000	-	-	104.727	-	-	-	-	-	104.727
Gross/Weapon System Cost	3,299.640	361	1,191.170	5,172.058	86	444.797	-	-	63.000	-	-	104.727	-	-	-	-	-	104.727

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10	P-1 Line Item Number / Title: 2944G80819 / Armored Multi Purpose Vehicle (AMPV)	Item Number / Title [DODIC]: G80819 / Armored Multi Purpose Vehicle (AMPV)

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Remarks:
Quantities will be updated to adjust for actual execution data in October 2021 and prior to the submission of the FY2023 President's Budget. Based on the current execution of the program, the quantities should be as follows: Prior Year increased from 361 to 370; FY 2020 decreased from 86 to 77; and the FY 2021 is 0.

The "Engineering Change Orders" cost element increased from Prior Year to \$28.900M to address user requested changes stemming from Limited User Testing (LUT).

The "Sys Eng / Prog Mgmt" cost element increased due to the program exiting the Engineering and Manufacturing Development (EMD) phase and shifting toward Production and Deployment. These costs will now be funded with W&TCV procurement dollars.

The "Training Device" cost element increased due to prototype final design decisions which finalized in FY 2021. The program plans to award Training Device production contract(s) in FY 2022.

The "System Technical Support (STS)" cost element decreased because of the decrease in production rates. This cost element is primarily used to identify production process improvements, manage obsolescence, software maintenance, fix issues coming from user testing, and perform problem investigations.

The "Total Packaging Fielding (TPF)" cost element increased to support preparation for the First Unit Equipped. This cost element provides fielding team support, training material refinement on Low Rate Initial Production (LRIP) vehicles, initial spare parts, and stands up a deprocessing location to support the First Unit Equipped (FUE).

The "Other" cost element captures the FY 2021 Department of Defense Appropriations Act rescissions.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	86	-	-	-	-
	Total Obligation Authority	444.797	63.000	104.727	-	104.727
Total: Secondary Distribution	Quantity	86	-	-	-	-
	Total Obligation Authority	444.797	63.000	104.727	-	104.727

(t) indicates the presence of a P-5a

UNCLASSIFIED

Exhibit P-5a, Procurement History and Planning: PB 2022 Army							Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10			P-1 Line Item Number / Title: 2944G80819 / Armored Multi Purpose Vehicle (AMPV)				Item Number / Title [DODIC]: G80819 / Armored Multi Purpose Vehicle (AMPV)					
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Vehicle Manufacturing - Contractor		2020	BAE Land Systems / York, PA	Option / FPIF	Warren, MI	Jan 2020	May 2024	77	2,817.883	N		

Remarks:
 There are no planned Vehicle Production Contracts in FY 2021 or FY 2022.
 The actual FY 2020 quantity purchased was 77 vehicles in January 2020.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity:
 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 10: Tracked Combat Vehicles

P-1 Line Item Number / Title:
 4872G84900 / ASSAULT BREACHER VEHICLE (ABV)

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	36	-	36	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	-	16.454	-	16.454	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	-	16.454	-	16.454	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	-	16.454	-	16.454	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	457.056	-	457.056	-	-	-	-	-	-

Description:

The Assault Breacher Vehicle (ABV) is a tracked combat engineer vehicle for the Army Armored Brigade Combat Team (ABCT) and Combat Engineer Company - Armor (CEC-A). It is designed to breach minefields and barrier obstacles to enable tanks and infantry of the ABCT to maintain pace in offensive combat operations. The Assault Breacher Vehicle provides crew protection and vehicle survivability equal to the M1A1 Abrams tank hull and has the speed and mobility to keep pace with the armor maneuver force. The Assault Breacher Vehicle hull is an overhauled M1A1 Abrams tank hull with modifications for its mission to support engineer companies within ABCTs and includes two Linear Demolition Charge Systems (modified Mine Clearing Line Charge (MCLC) systems), interchangeable Engineer Breaching System hardware consisting of a Full Width Mine Plow and a Combat Dozer Blade, a Lane Marking System to automatically mark a cleared path behind the Assault Breacher Vehicle and an integrated day/night vision system. The Assault Breacher Vehicle is fabricated at Anniston Army Depot (ANAD).

The Assault Breacher Vehicles' Army Acquisition Objective (AAO) is 201.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army									
Quantity	-	-	30	-	30	-	-	-	-
Total Obligation Authority	-	-	14.202	-	14.202	-	-	-	-
ANG									
Quantity	-	-	6	-	6	-	-	-	-
Total Obligation Authority	-	-	2.252	-	2.252	-	-	-	-
Total: Secondary Distribution									
Quantity	-	-	36	-	36	-	-	-	-
Total Obligation Authority	-	-	16.454	-	16.454	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity:
 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 10: Tracked Combat Vehicles

P-1 Line Item Number / Title:
 4872G84900 / ASSAULT BREACHER VEHICLE (ABV)

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	G89011 / ASSAULT BREACHER VEHICLE PRODUCTION				- / -	- / -	- / -	- / 2.685	- / -	- / 2.685
P-5	G89012 / ASSAULT BREACHER VEHICLE MODS	P-5a, P-21			- / -	- / -	- / -	36 / 13.769	- / -	36 / 13.769
P-40	Total Gross/Weapon System Cost				- / -	- / -	- / -	36 / 16.454	- / -	36 / 16.454

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY 2022 funding total includes \$16.454 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Base procurement dollars in the amount of \$2.685 million fund program support costs to complete fielding and transition to sustainment for the Assault Breacher Vehicle (ABV) program of record.

FY 2022 Base procurement dollars in the amount of \$13.769 million support the modification of 36 Abrams M1A2 heavy duty suspension upgrades and a software update for the Assault Breacher (ABV) program. The hardware upgrade will replace the obsolete M1A1 suspension and keep the Assault Breacher Vehicle suspension common to the current Abrams configuration. The software update to the Assault Breacher Vehicles will incorporate improved diagnostic capabilities and changes to maintain commonality and supportability with the Abrams-based family of vehicles.

This program line is not a new start. FY 2022 procurement funding has been realigned from Line 11, P-1 Line Number 4872G82925 / Assault Breacher Vehicle and from Line 9, P-1 Line Number 4520GZ3250 / Assault Bridge (Mod) which established a parent and two subordinate baby lines for this system to delineate between production and modification efforts to the system for greater transparency.

Funding in this line supports the organic industrial base with work to be performed at Anniston Army Depot, to include purchase of long lead material and subsequent production effort.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10	P-1 Line Item Number / Title: 4872G84900 / ASSAULT BREACHER VEHICLE (ABV)	Item Number / Title [DODIC]: G89011 / ASSAULT BREACHER VEHICLE PRODUCTION

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	-	-	2.685	-	2.685
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	-	2.685	-	2.685
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	-	2.685	-	2.685

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
System Engineering / Program Management	-	-	-	-	-	-	-	-	-	-	-	2.685	-	-	-	-	-	2.685
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	2.685	-	-	-	-	-	2.685
<i>Subtotal: Flyaway Cost</i>	-	-	-	-	-	-	-	-	-	-	-	2.685	-	-	-	-	-	2.685
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	-	-	2.685	-	-	-	-	-	2.685

Remarks:

This program line is not a new start. FY 2022 procurement funding has been realigned from Line 11, P-1 Line Number 4872G82925 / Assault Breacher Vehicle to Line 2 P-1 Line 4872G84900 Assault Breacher Vehicle (ABV) and has established parent and subordinate program lines for this system to delineate between production and modification efforts to provide greater transparency. P-1 Line Number 4872G82925 / Assault Breacher Vehicle was historically used to fund production only; however, FY 2022 procurement funding in the amount of \$2.685 million was realigned to support System Engineering and Program Management under the G89011 funding line.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	-	-	2.685	-	2.685
Total: Secondary Distribution	Quantity	-	-	-	-	-
	Total Obligation Authority	-	-	2.685	-	2.685

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10	P-1 Line Item Number / Title: 4872G84900 / ASSAULT BREACHER VEHICLE (ABV)	Item Number / Title [DODIC]: G89012 / ASSAULT BREACHER VEHICLE MODS

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	36	-	36
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	-	13.769	-	13.769
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	-	13.769	-	13.769
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	-	13.769	-	13.769

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	382.472	-	382.472

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
ABV Hardware - Modifications ^(†)	-	-	-	-	-	-	-	-	-	215.806	36	7.769	-	-	-	215.806	36	7.769
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	7.769	-	-	-	-	-	7.769
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	-	-	-	7.769	-	-	-	-	-	7.769
Software Cost																		
Non Recurring Cost																		
ABV Software Upgrade	-	-	-	-	-	-	-	-	-	-	-	6.000	-	-	-	-	-	6.000
<i>Subtotal: Non Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	6.000	-	-	-	-	-	6.000
<i>Subtotal: Software Cost</i>	-	-	-	-	-	-	-	-	-	-	-	6.000	-	-	-	-	-	6.000
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	382.472	36	13.769	-	-	-	382.472	36	13.769

Remarks:

This program line is not a new start. FY 2022 procurement funding has been realigned from Line 11, P-1 Line Number 4872G82925 / Assault Breacher Vehicle to Line 2 P-1 Line 4872G84900 Assault Breacher Vehicle (ABV) and has established parent and subordinate program lines for this system to delineate between production and modification efforts to provide greater transparency. P-1 Line Number 4872G82925 / Assault Breacher Vehicle was historically used to fund production only; however, FY 2022 procurement funding in the amount of \$13.769 million was realigned to procure both an A2 suspension hardware upgrade and a separate software upgrade under program line G89012 Assault Breacher Vehicle Mods.

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10	P-1 Line Item Number / Title: 4872G84900 / ASSAULT BREACHER VEHICLE (ABV)	Item Number / Title [DODIC]: G89012 / ASSAULT BREACHER VEHICLE MODS

ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:				
Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	-	-	30	-	30
	Total Obligation Authority	-	-	11.517	-	11.517
ANG	Quantity	-	-	6	-	6
	Total Obligation Authority	-	-	2.252	-	2.252
Total:	Quantity	-	-	36	-	36
Secondary Distribution	Total Obligation Authority	-	-	13.769	-	13.769

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army							Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10			P-1 Line Item Number / Title: 4872G84900 / ASSAULT BREACHER VEHICLE (ABV)				Item Number / Title [DODIC]: G89012 / ASSAULT BREACHER VEHICLE MODS					
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
ABV Hardware - Modifications ^(†)		2022	Anniston Army Depot / Anniston, AL	WR	Detroit Arsenal, MI	Jan 2022	Jul 2022	36	215.806	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2022 Army															Date: May 2021														
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10										P-1 Line Item Number / Title: 4872G84900 / ASSAULT BREACHER VEHICLE (ABV)										Item Number / Title [DODIC]: G89012 / ASSAULT BREACHER VEHICLE MODS									

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2022												Fiscal Year 2023												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022												Calendar Year 2023												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P

ABV Hardware - Modifications																																
1	2022	ARMY		36	0	36				A	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0

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Exhibit P-21, Production Schedule: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10		P-1 Line Item Number / Title: 4872G84900 / ASSAULT BREACHER VEHICLE (ABV)
		Item Number / Title [DODIC]: G89012 / ASSAULT BREACHER VEHICLE MODS

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2022	1-8-5 For 2022	MAX For 2022	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	Anniston Army Depot - Anniston, AL	3	3	3	4	4	6	10	4	4	6	10

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity:
2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 10: Tracked Combat Vehicles

P-1 Line Item Number / Title:
7181G80820 / Mobile Protected Firepower

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0604645A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	23	-	23	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	-	286.977	-	286.977	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	-	286.977	-	286.977	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	-	286.977	-	286.977	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	12,477.261	-	12,477.261	-	-	-	-	-	-

Description:

Infantry Brigade Combat Teams (IBCTs) currently lack the mobile, protected firepower capability necessary to defeat enemy prepared positions, destroy enemy armored vehicles, close with the enemy through fire and maneuver, and ensure freedom of maneuver and action in close contact with the enemy. The Mobile Protected Firepower Procurement funding supports production and fielding of the Mobile Protected Firepower (MPF) system, which will provide the Army's Infantry Brigade Combat Teams (IBCTs) a protected, long range, precision direct-fire capability to ensure freedom of movement during offensive operations and defeat attacking enemy during defensive operations.

On 25 September 2018, the Army Acquisition Executive (AAE) approved the use of Middle Tier Acquisition (MTA) authorities to execute Mobile Protected Firepower Rapid Prototyping. On 17 December 2018, Rapid Prototyping contracts were awarded to BAE Systems and General Dynamics Land Systems (GDLS). Delivery of Mobile Protected Firepower prototypes commenced in 3rd Quarter (3Q) FY 2020 and system testing began in 4th Quarter FY 2020. MPF testing will be completed early 2nd Quarter FY 2022 and will inform both the selection of a vendor for Low Rate Initial Production (LRIP) and a 3Q FY 2022 Milestone C decision.

The Mobile Protected Firepower Army Acquisition Objective (AAO) is 504 systems.

The Mobile Protected Firepower program supports the Next Generation Combat Vehicle (NGCV) Cross Functional Team (CFT).

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army									
	-	-	23	-	23	-	-	-	-
	-	-	286.977	-	286.977	-	-	-	-
Total:									
Secondary Distribution	-	-	23	-	23	-	-	-	-
	-	-	286.977	-	286.977	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 10: Tracked Combat Vehicles
P-1 Line Item Number / Title: 7181G80820 / Mobile Protected Firepower

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0604645A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	G80820 / Mobile Protected Firepower	P-5a, P-21	A		- / -	- / -	- / -	23 / 286.977	- / -	23 / 286.977
P-40	Total Gross/Weapon System Cost				- / -	- / -	- / -	23 / 286.977	- / -	23 / 286.977

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY 2022 funding total includes \$286.977 Million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Base Procurement dollars in the amount of \$286.977 million supports the production of 23 Low Rate Initial Production (LRIP) Mobile Protected Firepower (MPF) systems. The prime contractor for MPF production will be determined upon completion of an FY 2022 down-select between the MPF Rapid Prototyping vendors, BAE Systems and General Dynamics Land Systems. This initial LRIP lot will support performance testing, Initial Operational Test and Evaluation (IOT&E), and will be fielded to Army Infantry Brigade Combat Teams (IBCTs) starting FY 2025. Base Procurement funding will also purchase long lead time Initial Spares, Special Tools, Test Equipment (STTE) for system fielding, and Systems Technical Support (STS), to include cyber assessments to maintain software security, operation of a Systems Integration Lab (SIL) to retain software interoperability, and obsolescence management to identify diminishing manufacturing and material sources to enable uninterrupted low rate initial production. Finally, FY 2022 Base Procurement funding will provide program management, engineering, product assurance, contracting, and financial management support to direct and oversee MPF production.

This is a new start in FY 2022.

In FY 2022, funding in the amount of \$0.229 million for manpower was realigned to Operations and Maintenance. Program support costs have been accurately updated to reflect the realignments.

Army Acquisition Objective (AAO): 504 vehicles.

In accordance with section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110 - 181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

Mobile Protected Firepower is a new start in FY 2022.

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Exhibit P-5, Cost Analysis: PB 2022 Army						Date: May 2021			
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10				P-1 Line Item Number / Title: 7181G80820 / Mobile Protected Firepower			Item Number / Title [DODIC]: G80820 / Mobile Protected Firepower		
ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:					
Resource Summary				Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (<i>Units in Each</i>)				-	-	-	23	-	23
Gross/Weapon System Cost (<i>\$ in Millions</i>)				-	-	-	286.977	-	286.977
Less PY Advance Procurement (<i>\$ in Millions</i>)				-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)				-	-	-	286.977	-	286.977
Plus CY Advance Procurement (<i>\$ in Millions</i>)				-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)				-	-	-	286.977	-	286.977
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>									
Initial Spares (<i>\$ in Millions</i>)				-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)				-	-	-	12,477.261	-	12,477.261

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
Production - Contractor Furnished End Item ^(†)	-	-	-	-	-	-	-	-	-	11,772.609	23	270.770	-	-	-	11,772.609	23	270.770
Production - Government Furnished Material	-	-	-	-	-	-	-	-	-	-	-	2.994	-	-	-	-	-	2.994
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	<i>273.764</i>	-	-	-	-	-	<i>273.764</i>
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	-	-	-	<i>273.764</i>	-	-	-	-	-	<i>273.764</i>
Package Fielding Cost																		
Recurring Cost																		
Initial Spares and Special Tools	-	-	-	-	-	-	-	-	-	-	-	1.389	-	-	-	-	-	1.389
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	<i>1.389</i>	-	-	-	-	-	<i>1.389</i>
<i>Subtotal: Package Fielding Cost</i>	-	-	-	-	-	-	-	-	-	-	-	<i>1.389</i>	-	-	-	-	-	<i>1.389</i>
Support - Program Management Cost																		
Government Management	-	-	-	-	-	-	-	-	-	-	-	3.388	-	-	-	-	-	3.388
<i>Subtotal: Support - Program Management Cost</i>	-	-	-	-	-	-	-	-	-	-	-	<i>3.388</i>	-	-	-	-	-	<i>3.388</i>
Support - System Technical Support (STS) Cost																		
System Technical Support (STS)	-	-	-	-	-	-	-	-	-	-	-	8.436	-	-	-	-	-	8.436

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Exhibit P-5, Cost Analysis: PB 2022 Army												Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10						P-1 Line Item Number / Title: 7181G80820 / Mobile Protected Firepower						Item Number / Title [DODIC]: G80820 / Mobile Protected Firepower					
ID Code (A=Service Ready, B=Not Service Ready) : A												MDAP/MAIS Code:					

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
<i>Subtotal: Support - System Technical Support (STS) Cost</i>	-	-	-	-	-	-	-	-	-	-	-	8.436	-	-	-	-	-	8.436
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	12,477.261	23	286.977	-	-	-	12,477.261	23	286.977

Remarks:

FY 2022 Base Procurement dollars will procure 23 Mobile Protected Firepower (MPF) vehicles. In FY 2022, an additional three Low Rate Initial Production (LRIP) vehicles will be procured with RDT&E funding (Program Element 0604645A / Armored Systems Modernization (ASM) - Eng Dev) for use in MPF Full-Up System-Level (FUSL) live fire testing.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	-	-	23	-	23
	Total Obligation Authority	-	-	286.977	-	286.977
Total: Secondary Distribution	Quantity	-	-	23	-	23
	Total Obligation Authority	-	-	286.977	-	286.977

(t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army							Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10			P-1 Line Item Number / Title: 7181G80820 / Mobile Protected Firepower				Item Number / Title [DODIC]: G80820 / Mobile Protected Firepower					
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Production - Contractor Furnished End Item ^(†)		2022	To Be Determined / To Be Determined	Option / FPIF	Army Contracting Command - Warren, Michigan	Jun 2022	Dec 2023	23	11,772.609	N		

(†) indicates the presence of a P-21

Remarks:

In December 2018, contracts for Mobile Protected Firepower (MPF) Rapid Prototyping were awarded to BAE Systems and General Dynamics Land Systems (GDLS). In FY 2022, a Source Selection Evaluation Board (SSEB) will be convened to down-select to single vendor for Low Rate Initial Production (LRIP).

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Exhibit P-21, Production Schedule: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10	P-1 Line Item Number / Title: 7181G80820 / Mobile Protected Firepower	Item Number / Title [DODIC]: G80820 / Mobile Protected Firepower
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2022												Fiscal Year 2023												BALANCE	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022												Calendar Year 2023												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
Production - Contractor Furnished End Item																															
	1	2022	ARMY	23	0	23																								23	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10 **P-1 Line Item Number / Title:** 7181G80820 / Mobile Protected Firepower **Item Number / Title [DODIC]:** G80820 / Mobile Protected Firepower

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2024												Fiscal Year 2025												BALANCE	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	Calendar Year 2024												Calendar Year 2025												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
Production - Contractor Furnished End Item																															
1		2022	ARMY	23	0	23	-	-	1	2	2	2	2	2	2	2	2	3	3										0		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2022 Army	Date: May 2021
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Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 10	P-1 Line Item Number / Title: 7181G80820 / Mobile Protected Firepower	Item Number / Title [DODIC]: G80820 / Mobile Protected Firepower
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MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2022	1-8-5 For 2022	MAX For 2022	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	To Be Determined - To Be Determined	3	3	3	0	8	17	25	0	0	0	0

Remarks:
 The FY 2022 Mobile Protected Firepower (MPF) Low Rate Initial Production (LRIP) buy includes three RDTE-funded (Program Element 0604645A) vehicles and 23 vehicles procured with funding in WTCV Line Item 7181G80820/Mobile Protected Firepower. Given the MPF manufacturing lead time of 17 months, RDT&E-funded systems will be delivered in November 2023 (2 vehicles) and December 2023 (1 vehicle), while deliveries of WTCV-funded systems will commence in December 2023.

"A" in the Delivery Schedule indicates the Contract Award Date.
Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:** 0230GM0100 / Stryker (Mod)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0273735A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	967.749	397.687	-	-	-	-	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	967.749	397.687	-	-	-	-	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	967.749	397.687	-	-	-	-	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Stryker (Mod) program provides modifications to the Stryker Family of Vehicles (FoV) to resolve reliability, lethality, safety, operational, performance degradation, chemical detection and Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) obsolescence issues. Primary efforts involve the incorporation of fleet modifications, to include, C4ISR updates, Double V-Hull (DVH) Safety and Survivability updates, and training device procurement and the integration of Lethality Engineering Change Proposals (ECPs) (formerly ECP 2) lethality upgrades to enhance the suppressive fire and armored vehicle engagement capabilities of the Army's Stryker Brigade Combat Teams (SBCTs).

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	397.687	-	-	-	-	-	-	-	-
Total: Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	397.687	-	-	-	-	-	-	-	-

Justification:

There is no FY 2022 budget request for this funding line.

Stryker Modification efforts and funding in the 0230GM0100 / Stryker (Mod) funding line were realigned to 0363G85200 / Stryker Upgrade funding line starting in FY 2021.

In accordance with Section 1815 of the FY2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:** 0363G85200 / Stryker Upgrade

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0203735A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	517	143	254	187	-	187	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	1,726.793	513.858	1,164.152	1,005.028	-	1,005.028	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	1,726.793	513.858	1,164.152	1,005.028	-	1,005.028	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	1,726.793	513.858	1,164.152	1,005.028	-	1,005.028	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	3,340.025	3,593.413	4,583.276	5,374.481	-	5,374.481	-	-	-	-	-	-

Description:

A dynamic, asymmetric threat and operational environment demands full spectrum, strategically responsive, agile and dominant land forces. Immediate response by a lethal, versatile, tactically agile joint force capable of operational maneuver is essential to fulfilling the Army's Warfighting needs. The Stryker-equipped Brigade Combat Team (BCT) is this force. The use of a common platform/common chassis design reduces requirements for repair parts and logistics support in the area of operations. In response to operational needs identified in the Theater of Operations, the Stryker Double-V-Hull (DVH) survivability enhancement was approved for development and production by Acquisition Decision Memorandums (ADM) signed April 2010 and May 2011, respectively. The May 2011 ADM approved production of two Brigades, a 3rd DVH Brigade was approved in September 2011 with a 4th approved in September 2014. A DVH brigade is constructed through an exchange effort by which components and mission equipment packages are removed from flat bottom hull Strykers to be reassembled in the DVH structure along with the associated DVH unique components. In May 2012, Phase 1 (Technology Development), Stryker DVH A1 Engineering Change Proposal (DVHA1 ECP), formerly ECP1, development effort was approved to provide power generation, suspension, and network upgrades to restore Stryker DVH Space, Weight, and Power-Cooling (SWaP-C) lost as a result of incorporating vehicle changes to counter threats encountered during deployment operations. In May 2013, Phase II for the DVH A1 ECP development effort was approved. The DVH A1 ECP was approved for production in August 2016, with the DVH A1 ECP vehicles being produced using the exchange production process. Stryker Brigade Combat Teams (SBCTs), equipped with DVH A1 ECP vehicles, can be used across the full spectrum of military operations. SBCTs are required to deploy rapidly, and conduct effective combat operations immediately on arrival to prevent, contain, stabilize, or resolve a conflict through shaping and decisive operations. On 23 March 2018, the Army Requirements Oversight Council (AROC) approved the exchange of all remaining flat bottom hull Stryker Brigades from flat bottom hull to DVH A1 ECP. DVH A1 ECP has a new requirements contract for FY20-25. Production of Stryker DVH A1 ECP vehicles for this contract will be produced through a blend of new vehicle production and the current exchange process due to the limited available inventory of flat bottom hull Strykers required to feed the exchange production process. Configurations of Stryker DVHA1 ECP vehicles are:

Double-V-Hull A1 ECP Infantry Carrier: The DVH A1 ECP Infantry Carrier Vehicle (ICVVA1) carries an infantry squad with individual equipment. The Infantry Carrier Vehicle also provides protected transport and supporting fires for the infantry squad during dismounted assault. DVH A1 ECP Infantry Carrier Vehicles with a Scout Dismount Kit provide for dismounted force situational awareness, gathering and transmitting real time intelligence while moving throughout the battlefield in close, complex, and urban terrain.

Double-V-Hull A1 ECP Mortar Carrier: The DVH A1 ECP Mortar Carrier (MCVVA1) supports infantry units with screening obscurants, suppressive forces and on-call supporting fires. 120mm, 81mm, and 60mm mortars provide complementary capabilities with responsive, accurate and lethal indirect fire support to the dismounted infantry assault.

Double-V-Hull A1 ECP Commander's Vehicle: The DVH A1 ECP Commander's Vehicle (CVVA1) provides the brigade commanders and infantry battalion commanders with the means to receive information and data, analyze, prepare and transmit data, and control the forces/functions carrying out combat missions.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles		P-1 Line Item Number / Title: 0363G85200 / Stryker Upgrade
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0203735A
Line Item MDAP/MAIS Code: N/A		

Double-V-Hull A1 ECP Fire Support Vehicle: The DVH A1 ECP Fire Support Vehicle (FSVVA1) provides automated enhanced surveillance, target acquisition, target identification, target tracking, target designation, position location, and communications functionality. Targets will be transmitted instantly to the fire support system and shooter.

Double-V-Hull A1 ECP Engineer Squad Vehicle: The DVH A1 ECP Engineer Squad Vehicle (ESVVA1) provides maneuver/mobility support capabilities which include obstacle clearing, in-stride breaching of surface mines, proofing of subsurface mines, and smoke generation for local protection.

Double-V-Hull A1 ECP Medical Evacuation Vehicle: The DVH A1 ECP Medical Evacuation Vehicle (MEVVA1) is the Battalion Aid Station for brigade units, providing treatment for serious injury and advanced trauma cases.

Double-V-Hull A1 ECP Antitank Guided Missile Vehicle: The DVH A1 ECP Antitank Guided Missile Vehicle (ATVVA1) is the brigade's primary tank killing system. The Antitank Guided Missile Vehicle (ATW) reinforces the brigade's infantry battalion, reinforces the brigade reconnaissance squadron, and provides long-range direct fire.

Double V Hull A1 30mm Medium Caliber Weapon System (MCWS): The Stryker 30mm MCWS carries an infantry or cavalry squad with individual equipment. The DVH A1 30mm Lethality Vehicle provides increased lethality capable of firing a variety of munitions designed to support each organization and their dismounted elements when executing combined arms maneuver and wide area security operations. This variant includes the DVH A1 ECP platform and the integrated 30mm Mission Equipment Package (MEP).

Procuring Double-V-Hull A1 ECP Medical Evacuation Vehicles to support Terrestrial Layered System (TLS) Program for Project Manager (PM) Electronic Warfare and Cyber.

Modifications to the Stryker Family of Vehicles (FoV) to resolve reliability, lethality, safety, operational, performance degradation, chemical detection and Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) obsolescence issues. Primary efforts involve the incorporation of fleet modifications, to include, C4ISR updates, DVH safety and Survivability updates, and training device procurement and the retrofit of Lethality Engineering Change Proposals (ECPs) (formerly ECP 2) upgrades to enhance the suppressive fire and armored vehicle engagement capabilities of the Army's Stryker Brigade Combat Teams (SBCTs).

Training Aids, Devices, Simulators, and Simulations (TADSS): Funding provides for the integration of the Vehicle Tactical Engagement Simulation System (V-TESS) and supports the United States Army Combined Arms Support Command (CASCOM) and the requirement for the Stryker Vehicle Maintainer Training Course to support establishment of the Stryker-unique 91S Military Occupational Series (MOS). The 91S training course requires purchase of the following training devices: Diagnostic Troubleshooting Trainers (DTTs), Anti-Tank Guided Missile Vehicle Hands-On Trainers (HOTs), Full-Up Power Pack Part Task Trainers (FUPP PTTs), Mortar Carrier Hands-On Trainers (MC HOTs), and Mobile Gun System Hands-On Trainers (HOTs).

Retrofit Planning and Site Management: Funding supports kit material handling and fleet-wide retrofits for the Stryker Family of Vehicles (FoV).

Test Fleet Maintenance funding maintains the Stryker test fleet, to include contractor repair labor and operations of Stryker repair parts warehouses located at the Army's test centers.

Program management, engineering, and logistics support necessary to execute Stryker modifications to include DVH A1 ECPs, Fleet Modifications, C4I Obsolescence and Next Generation items, 30mm Infantry Carrier Vehicle - Dragoon (ICVD) Operational Needs Statement, ONS, and Lethality ECPs.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	143	254	187	-	187	-	-	-	-
	Total Obligation Authority	513.858	1,164.152	1,005.028	-	1,005.028	-	-	-	-
Total:	Quantity	143	254	187	-	187	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles	P-1 Line Item Number / Title: 0363G85200 / Stryker Upgrade
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0203735A
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Line Item MDAP/MAIS Code: N/A

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Secondary Distribution	Total Obligation Authority	513.858	1,164.152	1,005.028	-	1,005.028	-	-	-	-

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity:
 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:**
 0363G85200 / Stryker Upgrade

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0203735A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	G85200 / Stryker Upgrade	P-5a, P-21	A		517 / 1,726.793	143 / 513.858	254 / 1,164.152	187 / 1,005.028	- / -	187 / 1,005.028
P-40	Total Gross/Weapon System Cost				517 / 1,726.793	143 / 513.858	254 / 1,164.152	187 / 1,005.028	- / -	187 / 1,005.028

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

Note: Stryker Modification efforts and funding in Budget Line 4, 0230GM0100 / Stryker (Mod) were realigned to Budget Line 5, 0363G85200 / Stryker Upgrade starting in FY 2021.

FY 2022 funding total includes \$1,005.028 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Base procurement dollars in the amount of \$1,005.028 million supports the following:

The production of Double V Hull A1 (DVH A1) Engineering Change Proposal (ECP) vehicles, produced using flat bottom Stryker exchange and new production build processes, providing increased electrical power, mechanical power, weight margin, and cooling. Combined with a digital backbone, the enhanced DVH A1 ECP fleet will be able to host the future network while maintaining protection and mobility characteristics.

Lethality ECPs include efforts to replace the current Remote Weapon Station with the Common Remotely Operated Weapon Station (CROWS) with under armor Javelin fire capability, integrate improved optics and targeting systems onto the Anti-Tank Guided Missile (ATGM) vehicle, incorporate the 30mm Lethality Mission Equipment Package (MEP) onto a DVH A1 platform, and integrate other capabilities into the Stryker fleet. These improvements will provide for increased under armor fire capability, target identification range, provide overmatch against peer threats and supporting infantry assault, and address obsolescence within the targeting and reconnaissance systems utilized on the Stryker Family of Vehicles (FoV).

Stryker FoV fleet modifications address changes to the vehicle configurations resulting from identified safety issues, performance degradation issues, obsolescence issues, Modified Table of Organization & Equipment (MTO&E) changes, or Operational Need Statements (ONS). Scheduled modifications include: Joint Chemical Agent Detector (JCAD), Vehicle Intercom, In-Vehicle Network 2 (IVN2), Energy Attenuating seats for Flat Bottom Hull (FBH) vehicles, Mortar Carrier Fire Control Computer, RMS6-L N2 Recuperator gauge, Improved Battery Box, troop heater improvements, DVH survivability and safety modifications, refresh of the Fire Support Vehicle (FSV) Mission Equipment Package (MEP) and integration of emerging technologies such as Integrated Visual Augmentation System (IVAS) and improved power solution efforts. Modifications will be conducted by field modification teams, subject to vehicle/hardware availability.

Retrofit planning and site management funding provides for kit material handling, and retrofit site management to support fleet-wide retrofits of the Stryker FoV.

Training Aids, Devices, Simulators, and Simulations (TADSS) funding provides for the integration of the Vehicle Tactical Engagement Simulation System (V-TESS) and supports the United States Army Combined Arms Support Command (CASCOM) and the requirement for the Stryker Vehicle Maintainer Training Course to support establishment of the Stryker-unique 91S Military Occupational Series (MOS). The 91S training course requires purchase of the Diagnostic Troubleshooting Trainers (DTTs).

Test Fleet Maintenance maintains the Stryker test fleet, to include contractor repair labor and operation of Stryker repair parts warehouses located at the Army's test centers (Aberdeen Proving Grounds, Yuma Proving Grounds, and Electronic Proving Grounds). Maintenance is required to ensure the test fleet is positioned to support testing needs and is in the appropriate condition to ensure accurate and verifiable test results.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles		P-1 Line Item Number / Title: 0363G85200 / Stryker Upgrade
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0203735A
Line Item MDAP/MAIS Code: N/A		
<p>Development Test on Stryker In-Vehicle Network 2 modification and 30mm Lethality vehicle production testing which includes safety, performance, durability and environmental tests.</p> <p>Program management, engineering, and logistics support necessary to execute Stryker modifications to include DVH A1 ECPs, Fleet Modifications, C4I Obsolescence and Next Generation items, 30mm ICVD ONS, and Lethality ECPs.</p> <p>In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.</p> <p>Army Acquisition Objective: 4,459</p> <p>The Army Acquisition Objective includes quantity requirements for Stryker Brigade Combat Teams and other Army programs of record which utilize the Stryker vehicle as their base platform.</p> <p>In FY 2022, \$0.365 million in Reimbursable Manpower for this line has been realigned from Reimbursable Civilian Funding to Direct Operations and Maintenance. Program support costs have been accurately updated to reflect the realignments.</p>		

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Exhibit P-5, Cost Analysis: PB 2022 Army											Date: May 2021						
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20						P-1 Line Item Number / Title: 0363G85200 / Stryker Upgrade					Item Number / Title [DODIC]: G85200 / Stryker Upgrade						
ID Code (A=Service Ready, B=Not Service Ready) : A											MDAP/MAIS Code:						
Resource Summary				Prior Years		FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total			
Procurement Quantity (Units in Each)				517		143		254		187		-		187			
Gross/Weapon System Cost (\$ in Millions)				1,726.793		513.858		1,164.152		1,005.028		-		1,005.028			
Less PY Advance Procurement (\$ in Millions)				-		-		-		-		-		-			
Net Procurement (P-1) (\$ in Millions)				1,726.793		513.858		1,164.152		1,005.028		-		1,005.028			
Plus CY Advance Procurement (\$ in Millions)				-		-		-		-		-		-			
Total Obligation Authority (\$ in Millions)				1,726.793		513.858		1,164.152		1,005.028		-		1,005.028			
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																	
Initial Spares (\$ in Millions)				-		-		-		-		-		-		-	
Gross/Weapon System Unit Cost (\$ in Thousands)				3,340.025		3,593.413		4,583.276		5,374.481		-		5,374.481			

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
DVH A1 ECP Infantry Carrier Vehicle ^(†)	2,693.281	306	824.144	2,563.544	114	292.244	2,703.531	81	218.986	2,557.663	80	204.613	-	-	-	2,557.663	80	204.613
DVH A1 ECP Anti-Tank Guided Missile Veh ^(†)	2,839.846	13	36.918	-	-	-	2,860.400	10	28.604	2,867.100	10	28.671	-	-	-	2,867.100	10	28.671
DVH A1 ECP Mortar Carrier Vehicle ^(†)	2,826.016	63	178.039	2,822.308	13	36.690	3,110.400	20	62.208	2,749.571	21	57.741	-	-	-	2,749.571	21	57.741
DVH A1 ECP Fire Support Vehicle ^(†)	2,940.238	21	61.745	-	-	-	2,690.125	16	43.042	2,750.667	6	16.504	-	-	-	2,750.667	6	16.504
DVH A1 ECP Engineer Squad Vehicle ^(†)	2,873.438	16	45.975	-	-	-	3,056.375	16	48.902	2,857.750	8	22.862	-	-	-	2,857.750	8	22.862
DVH A1 ECP Commander's Vehicle ^(†)	2,737.615	52	142.356	2,739.813	16	43.837	2,899.737	19	55.095	2,836.929	14	39.717	-	-	-	2,836.929	14	39.717
DVH A1 ECP Medical Evacuation Vehicle ^(†)	2,756.413	46	126.795	-	-	-	2,866.400	55	157.652	2,814.286	7	19.700	-	-	-	2,814.286	7	19.700
DVH A1 30mm MCWS ^(†)	-	-	-	-	-	-	6,345.952	42	266.530	5,749.098	41	235.713	-	-	-	5,749.098	41	235.713
Program Management Support (Govt)	-	-	77.041	-	-	40.057	-	-	36.266	-	-	36.630	-	-	-	-	-	36.630

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Exhibit P-5, Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20 **P-1 Line Item Number / Title:** 0363G85200 / Stryker Upgrade **Item Number / Title [DODIC]:** G85200 / Stryker Upgrade

ID Code (A=Service Ready, B=Not Service Ready) : A **MDAP/MAIS Code:**

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Government Furnished Equipment (GFE)	-	-	18.447	-	-	0.214	-	-	1.759	-	-	1.299	-	-	-	-	-	1.299
<i>Subtotal: Recurring Cost</i>	-	-	<i>1,511.460</i>	-	-	<i>413.042</i>	-	-	<i>919.044</i>	-	-	<i>663.450</i>	-	-	<i>-</i>	-	-	<i>663.450</i>
<i>Subtotal: Flyaway Cost</i>	-	-	<i>1,511.460</i>	-	-	<i>413.042</i>	-	-	<i>919.044</i>	-	-	<i>663.450</i>	-	-	<i>-</i>	-	-	<i>663.450</i>
Hardware Cost																		
Recurring Cost																		
Fleet Modifications	-	-	-	-	-	-	-	-	17.167	-	-	3.247	-	-	-	-	-	3.247
CROWS-J ECP	-	-	-	-	-	-	-	-	-	-	-	81.854	-	-	-	-	-	81.854
ATGM ECP	-	-	-	-	-	-	-	-	26.908	-	-	17.463	-	-	-	-	-	17.463
C4ISR Modifications	-	-	-	-	-	-	-	-	-	-	-	1.789	-	-	-	-	-	1.789
<i>Subtotal: Recurring Cost</i>	-	-	<i>-</i>	-	-	<i>-</i>	-	-	<i>44.075</i>	-	-	<i>104.353</i>	-	-	<i>-</i>	-	-	<i>104.353</i>
<i>Subtotal: Hardware Cost</i>	-	-	<i>-</i>	-	-	<i>-</i>	-	-	<i>44.075</i>	-	-	<i>104.353</i>	-	-	<i>-</i>	-	-	<i>104.353</i>
Package Fielding Cost																		
Recurring Cost																		
System Fielding Support - DVH A1	-	-	104.605	-	-	38.054	-	-	32.063	-	-	84.450	-	-	-	-	-	84.450
<i>Subtotal: Recurring Cost</i>	-	-	<i>104.605</i>	-	-	<i>38.054</i>	-	-	<i>32.063</i>	-	-	<i>84.450</i>	-	-	<i>-</i>	-	-	<i>84.450</i>
Non Recurring Cost																		
Authorized Stockage List - DVH A1	-	-	68.061	-	-	18.641	-	-	49.781	-	-	47.209	-	-	-	-	-	47.209
<i>Subtotal: Non Recurring Cost</i>	-	-	<i>68.061</i>	-	-	<i>18.641</i>	-	-	<i>49.781</i>	-	-	<i>47.209</i>	-	-	<i>-</i>	-	-	<i>47.209</i>
<i>Subtotal: Package Fielding Cost</i>	-	-	<i>172.666</i>	-	-	<i>56.695</i>	-	-	<i>81.844</i>	-	-	<i>131.659</i>	-	-	<i>-</i>	-	-	<i>131.659</i>
Logistics Cost																		
Recurring Cost																		
Retrofit Planning and Site Management	-	-	-	-	-	-	-	-	8.973	-	-	9.243	-	-	-	-	-	9.243
<i>Subtotal: Recurring Cost</i>	-	-	<i>-</i>	-	-	<i>-</i>	-	-	<i>8.973</i>	-	-	<i>9.243</i>	-	-	<i>-</i>	-	-	<i>9.243</i>
<i>Subtotal: Logistics Cost</i>	-	-	<i>-</i>	-	-	<i>-</i>	-	-	<i>8.973</i>	-	-	<i>9.243</i>	-	-	<i>-</i>	-	-	<i>9.243</i>
Support - Support Equipment Cost																		
Maintenance Equipment	-	-	1.986	-	-	-	-	-	5.539	-	-	5.476	-	-	-	-	-	5.476
<i>Subtotal: Support - Support Equipment Cost</i>	-	-	<i>1.986</i>	-	-	<i>-</i>	-	-	<i>5.539</i>	-	-	<i>5.476</i>	-	-	<i>-</i>	-	-	<i>5.476</i>
Support - System Engineering Cost																		
System Engineering	-	-	40.681	-	-	38.233	-	-	70.690	-	-	40.404	-	-	-	-	-	40.404

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Exhibit P-5, Cost Analysis: PB 2022 Army												Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20						P-1 Line Item Number / Title: 0363G85200 / Stryker Upgrade						Item Number / Title [DODIC]: G85200 / Stryker Upgrade					
ID Code (A=Service Ready, B=Not Service Ready) : A												MDAP/MAIS Code:					

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
<i>Subtotal: Support - System Engineering Cost</i>	-	-	40.681	-	-	38.233	-	-	70.690	-	-	40.404	-	-	-	-	-	40.404
Support - System Test and Evaluation Cost																		
Development Test and Evaluation	-	-	-	-	-	-	-	-	11.135	-	-	21.629	-	-	-	-	-	21.629
Test and Evaluation Support	-	-	-	-	-	5.888	-	-	4.864	-	-	4.966	-	-	-	-	-	4.966
<i>Subtotal: Support - System Test and Evaluation Cost</i>	-	-	-	-	-	5.888	-	-	15.999	-	-	26.595	-	-	-	-	-	26.595
Support - Training Cost																		
Equipment	-	-	-	-	-	-	-	-	17.988	-	-	23.848	-	-	-	-	-	23.848
<i>Subtotal: Support - Training Cost</i>	-	-	-	-	-	-	-	-	17.988	-	-	23.848	-	-	-	-	-	23.848
Gross/Weapon System Cost	3,340.025	517	1,726.793	3,593.413	143	513.858	4,583.276	254	1,164.152	5,374.481	187	1,005.028	-	-	-	5,374.481	187	1,005.028

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	143	254	187	-	187
	Total Obligation Authority	513.858	1,164.152	1,005.028	-	1,005.028
Total:	Quantity	143	254	187	-	187
Secondary Distribution	Total Obligation Authority	513.858	1,164.152	1,005.028	-	1,005.028

(t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army								Date: May 2021				
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20			P-1 Line Item Number / Title: 0363G85200 / Stryker Upgrade					Item Number / Title [DODIC]: G85200 / Stryker Upgrade				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
DVH A1 ECP Infantry Carrier Vehicle ^(†)		2020	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2020	May 2021	114	2,563.544	Y		
DVH A1 ECP Infantry Carrier Vehicle ^(†)		2021	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2021	May 2022	81	2,703.531	Y		
DVH A1 ECP Infantry Carrier Vehicle ^(†)		2022	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2022	Sep 2023	80	2,557.663	Y		
DVH A1 ECP Anti-Tank Guided Missile Veh ^(†)		2021	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2021	Jun 2022	10	2,860.400	Y		
DVH A1 ECP Anti-Tank Guided Missile Veh ^(†)		2022	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2022	Sep 2023	10	2,867.100	Y		
DVH A1 ECP Mortar Carrier Vehicle ^(†)		2020	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2020	Nov 2021	13	2,822.308	Y		
DVH A1 ECP Mortar Carrier Vehicle ^(†)		2021	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2021	May 2022	20	3,110.400	Y		
DVH A1 ECP Mortar Carrier Vehicle ^(†)		2022	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2022	May 2023	21	2,749.571	Y		
DVH A1 ECP Fire Support Vehicle ^(†)		2021	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2021	May 2022	16	2,690.125	N		
DVH A1 ECP Fire Support Vehicle ^(†)		2022	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2022	May 2023	6	2,750.667	Y		
DVH A1 ECP Engineer Squad Vehicle ^(†)		2021	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2021	Aug 2022	16	3,056.375	N		
DVH A1 ECP Engineer Squad Vehicle ^(†)		2022	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2022	Feb 2024	8	2,857.750	Y		
DVH A1 ECP Commander's Vehicle ^(†)		2020	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2020	Jun 2021	16	2,739.813	Y		
DVH A1 ECP Commander's Vehicle ^(†)		2021	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2021	Oct 2022	19	2,899.737	Y		
DVH A1 ECP Commander's Vehicle ^(†)		2022	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2022	Nov 2023	14	2,836.929	Y		
DVH A1 ECP Medical Evacuation Vehicle ^(†)		2021	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2021	May 2022	55	2,866.400	Y		
DVH A1 ECP Medical Evacuation Vehicle ^(†)		2022	GM GDLS Defense Group L.L.C. / Shelby Township	SS / FPIF	TACOM	Mar 2022	Oct 2023	7	2,814.286	Y		
DVH A1 30mm MCWS ^(†)		2021	TBD / TBD	SS / Various	TACOM	Mar 2021	Aug 2022	42	6,345.952	Y		

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army	Date: May 2021
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Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 0363G85200 / Stryker Upgrade	Item Number / Title [DODIC]: G85200 / Stryker Upgrade
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
DVH A1 30mm MCWS ^(†)		2022	TBD / TBD	SS / Various	TACOM	Mar 2022	May 2023	41	5,749.098	N		

^(†) indicates the presence of a P-21

Remarks:
Based on actual execution of the program FY 2021 quantities are now 259 and will be updated to reflect that amount prior to the FY 2023 budget submission.

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Exhibit P-21, Production Schedule: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 0363G85200 / Stryker Upgrade	Item Number / Title [DODIC]: G85200 / Stryker Upgrade
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Cost Elements (Units in Each)					Fiscal Year 2022													Fiscal Year 2023													BALANCE		
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022													Calendar Year 2023													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
DVH A1 ECP Infantry Carrier Vehicle																																	
Prior Years Deliveries: 306																																	
	1	2020	ARMY	114	45	69	9	10	9	10	10	10	11																	0			
	1	2021	ARMY	81	0	81	-	-	-	-	-	-	-	9	10	8	2	3	1	6	6	6	11	7	12					0			
	1	2022	ARMY	80	0	80								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	70			
DVH A1 ECP Anti-Tank Guided Missile Veh																																	
Prior Years Deliveries: 13																																	
	2	2021	ARMY	10	0	10	-	-	-	-	-	-	-	1	3	2	3	1												0			
	3	2022	ARMY	10	0	10								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	8			
DVH A1 ECP Mortar Carrier Vehicle																																	
Prior Years Deliveries: 63																																	
	4	2020	ARMY	13	0	13	-	2	2	2	2	2	3																	0			
	4	2021	ARMY	20	0	20	-	-	-	-	-	-	-	4	4	-	1	-	-	-	-	-	1	5	5					0			
	4	2022	ARMY	21	0	21								A	-	-	-	-	-	-	-	-	-	-	5	5	5	5	1	0			
DVH A1 ECP Fire Support Vehicle																																	
Prior Years Deliveries: 21																																	
	5	2021	ARMY	16	0	16	-	-	-	-	-	-	-	1	1	2	2	1	1	1	1	1	1	2	2					0			
	5	2022	ARMY	6	0	6								A	-	-	-	-	-	-	-	-	-	-	2	2	2		0				
DVH A1 ECP Engineer Squad Vehicle																																	
Prior Years Deliveries: 16																																	
	6	2021	ARMY	16	0	16	-	-	-	-	-	-	-	-	-	3	5	3	-	-	-	-	2	3						0			
	6	2022	ARMY	8	0	8								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8				
DVH A1 ECP Commander's Vehicle																																	
Prior Years Deliveries: 52																																	
	7	2020	ARMY	16	12	4	3	1																						0			
	7	2021	ARMY	19	0	19	-	-	-	-	-	-	-	-	-	-	-	-	4	5	5	5								0			
	7	2022	ARMY	14	0	14								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14				
DVH A1 ECP Medical Evacuation Vehicle																																	
Prior Years Deliveries: 46																																	
	8	2021	ARMY	55	0	55	-	-	-	-	-	-	-	1	1	6	6	7	7	7	7	6	6	1						0			
	8	2022	ARMY	7	0	7								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7				
DVH A1 30mm MCWS																																	
	9	2021	ARMY	42	0	42	-	-	-	-	-	-	-	-	-	5	5	7	5	5	5	5	5							0			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 0363G85200 / Stryker Upgrade	Item Number / Title [DODIC]: G85200 / Stryker Upgrade
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2024												Fiscal Year 2025												BALANCE	
O C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	Calendar Year 2024												Calendar Year 2025												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
DVH A1 ECP Infantry Carrier Vehicle																															
Prior Years Deliveries: 306																															
	1	2020	ARMY	114	114	0																							0		
	1	2021	ARMY	81	81	0																							0		
	1	2022	ARMY	80	10	70		9	8	10	10	9	12	12															0		
DVH A1 ECP Anti-Tank Guided Missile Veh																															
Prior Years Deliveries: 13																															
	2	2021	ARMY	10	10	0																							0		
	3	2022	ARMY	10	2	8		3		3	2																		0		
DVH A1 ECP Mortar Carrier Vehicle																															
Prior Years Deliveries: 63																															
	4	2020	ARMY	13	13	0																							0		
	4	2021	ARMY	20	20	0																							0		
	4	2022	ARMY	21	21	0																							0		
DVH A1 ECP Fire Support Vehicle																															
Prior Years Deliveries: 21																															
	5	2021	ARMY	16	16	0																							0		
	5	2022	ARMY	6	6	0																							0		
DVH A1 ECP Engineer Squad Vehicle																															
Prior Years Deliveries: 16																															
	6	2021	ARMY	16	16	0																							0		
	6	2022	ARMY	8	0	8		-	-	-	-	2	3	3															0		
DVH A1 ECP Commander's Vehicle																															
Prior Years Deliveries: 52																															
	7	2020	ARMY	16	16	0																							0		
	7	2021	ARMY	19	19	0																							0		
	7	2022	ARMY	14	0	14		-	2	3	5	4																	0		
DVH A1 ECP Medical Evacuation Vehicle																															
Prior Years Deliveries: 46																															
	8	2021	ARMY	55	55	0																							0		
	8	2022	ARMY	7	0	7		4	3																				0		
DVH A1 30mm MCWS																															
	9	2021	ARMY	42	42	0																							0		
								O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P

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Exhibit P-21, Production Schedule: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20		P-1 Line Item Number / Title: 0363G85200 / Stryker Upgrade
		Item Number / Title [DODIC]: G85200 / Stryker Upgrade

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2022	1-8-5 For 2022	MAX For 2022	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	GM GDLS Defense Group L.L.C. - Shelby Township	14	29	35	12	12	11	23	6	2	11	13
2	GM GDLS Defense Group L.L.C. - Shelby Township	14	29	35	12	12	11	23	6	2	11	13
3	GM GDLS Defense Group L.L.C. - Shelby Township	14	29	35	12	12	13	25	6	2	11	13
4	GM GDLS Defense Group L.L.C. - Shelby Township	14	29	35	12	12	11	23	6	2	11	13
5	GM GDLS Defense Group L.L.C. - Shelby Township	14	29	35	12	12	11	23	6	2	11	13
6	GM GDLS Defense Group L.L.C. - Shelby Township	14	29	35	12	12	11	23	6	2	11	13
7	GM GDLS Defense Group L.L.C. - Shelby Township	14	29	35	12	12	11	23	6	2	11	13
8	GM GDLS Defense Group L.L.C. - Shelby Township	14	29	35	12	12	11	23	6	2	11	13
9	TBD - TBD	14	29	35	12	5	20	25	6	2	15	17

Remarks:
 Lead time for Stryker Double V Hull A1 variants is 11-13 months.
 Lead time for FY 2022 Double V Hull A1 30mm Lethality is 20 months due to synchronization of the Double V Hull A1 platform and 30mm Mission Equipment Package integration.
 Based on actual execution of the program FY 2021 quantities are now 259 and will be updated prior to the FY 2023 budget submission.

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity:
 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:**
 1678GZ2400 / Bradley Program (MOD)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0203735A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	6,207.875	415.740	277.259	461.385	-	461.385	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	6,207.875	415.740	277.259	461.385	-	461.385	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	6,207.875	415.740	277.259	461.385	-	461.385	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	38,558.230	4,199.394	-	6,886.343	-	6,886.343	-	-	-	-	-	-

Description:

The Bradley Fighting Vehicle (BFV) is a fighting vehicle platform designed to transport infantry or scouts with armor protection, while providing covering fire to suppress enemy troops and armored vehicles. The primary mission area for the Bradley Fighting Vehicle is to support the mission of the Armored Brigade Combat Team (ABCT) and the ABCT mission is to fight and win engagements and battles in support of operational and strategic national objectives.

The Bradley Program (MOD) funding line procures upgrades to the Bradley Fighting Vehicle and procures Army Acquisition Executive (AAE) approved Engineering Change Proposals (ECPs). There are currently two Engineering Change Proposals (ECP) in this program, Track and Suspension and the A4 Mobility.

The Track and Suspension ECP improves the vehicle fleet's suspension increasing underbelly clearance and provides extended life track.

The Bradley A4 Mobility ECP addresses space, weight, power, and cooling issues with an improved powertrain and electrical system.

The Bradley A4 Mobility ECP also enables the Bradley to host inbound technologies from other Army Programs of Record, such as, but not limited to the Integrated Tactical Network (ITN) and support for the Individual Visual Augmentation System (IVAS). The Bradley M2A4 and M7A4 Vehicles are the combination of the A3 or ODS-SA Base Vehicle with Track and Suspension and Bradley A4 components installed and integrated. Additionally, the Bradley Program (MOD) procures underbelly armor kits, upgraded training systems, and other upgrades, including but not limited to high priority improvements, modification kits for other Army programs such as the Integrated Tactical Network (ITN) and Individual Visual Augmentation System (IVAS), and obsolescence mitigation.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	415.740	277.259	461.385	-	461.385	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	415.740	277.259	461.385	-	461.385	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:** 1678GZ2400 / Bradley Program (MOD)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0203735A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	GZ2400 / Bradley Program (MOD) (Increase Performance)		A		- / 6,207.875	- / 415.740	- / 277.259	- / 461.385	- / -	- / 461.385
P-40	Total Gross/Weapon System Cost				- / 6,207.875	- / 415.740	- / 277.259	- / 461.385	- / -	- / 461.385

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

FY 2022 funding total includes \$461.385 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Base procurement dollars in the amount of \$461.385 million supports procurement of multiple modifications to the Bradley vehicle: procurement and installation of the Track and Suspension ECP, procurement and fielding of M2A4/M7A4 vehicles, upgrades to the Bradley Fire Support Team vehicle, procurement of training devices, and procurement of safety upgrades. Current projections indicate the Bradley Fighting Vehicle and the Bradley Fire Support Vehicle will remain in the Armored Brigade Combat Team (ABCT) formation until the 2050s.

The procurement of M2A4/M7A4 vehicles will continue with the award of a follow-on contract to BAE in FY 2022. The program provides several components to BAE as government furnished material (GFM) in order to reduce overall unit cost. GFM includes, but is not limited to, the Commander's Viewer Unit (CVU), engines, and transmissions. In order to follow the OSD full-funding policy, funding for a complete vehicle is required in FY 2022 to meet the manufacture's acquisition lead time. GFM contracts are awarded according to varying lead times and will not occur until FY 2023.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-3a, Individual Modification: PB 2022 Army					Date: May 2021		
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20		P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)			Modification Number / Title: GZ2400 / Bradley Program (MOD)		
ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:			
Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	
Gross/Weapon System Cost (<i>\$ in Millions</i>)	6,207.875	415.740	277.259	461.385	-	461.385	
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	
Net Procurement (P-1) (<i>\$ in Millions</i>)	6,207.875	415.740	277.259	461.385	-	461.385	
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	
Total Obligation Authority (<i>\$ in Millions</i>)	6,207.875	415.740	277.259	461.385	-	461.385	
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>							
Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	38,558.230	4,199.394	-	6,886.343	-	6,886.343	

Description:

MOD 2 (BFVS High Priority Improvements) - Provides funding for the components, application, and engineering support of improvements designed to resolve problems identified in the field, improve safety, integrate new equipment, develop and integrate mod kits, and bring the vehicles into compliance with transportability and recovery requirements. Provides funding to maintain software versions and update integrated logistics products.

MOD 3 (Training Equipment Devices) - Provides funding to support procurement and fielding of Bradley Fighting Vehicle Training Aids, Devices, Simulators and Simulations (TADSS). The Bradley training base requires a technical refresh of the following systems to address obsolescence issues: M2A3/M7A3 Part Task Trainers (PTT), Crew Module Unit Recorder (CMUR) and the Bradley Common Software Library (BCSL). Production funding will also provide new A4 Turret Hands on Trainers and A3/A4 Parts Task Trainers required by the US Army Training and Doctrine Command (TRADOC) System Training Plan.

MOD 5 (Program/Engineering Support) - Program/Engineering Support includes both government & contractor program management support to oversee program planning & procurement of Engineering Change Proposals (ECPs), conversion of Bradley configurations and industrial base mitigation.

MOD 6 (BFVS Track and Suspension Modification) - Provides funding to support procurement and fielding of the Track and Suspension Engineering Change Proposals (ECP) to the Bradley Vehicle fleet. The Track and Suspension field modifications include track and suspension system upgrades that help to alleviate mobility, force protection, and system survivability deficiencies. Costs associated with kit installations are included in the funding for the prime hardware contracts.

MOD 7 (BFVS Mobility Modifications) - Provides funding to support procurement and fielding of Bradley A4 variant vehicles. In addition to vehicles, funding supports the procurement of government furnished material, engineering support related to production, and fielding. The M2A4/M7A4 Bradley regain lost capability due to added weight by upgrading the powerpack and drivetrain systems. The A4 improves the electrical system to enable hosting of inbound technologies from other Army Programs of Record. Costs associated with kit installations are included in the funding for the prime hardware contracts. The Army Procurement Object (APO) is 731 A4s for four Armor Brigade Combat Teams, one Army Prepositioned Stock brigade to support European Deterrence Initiative, and TRADOC vehicles. Prior to FY 2020, 175 vehicles received the Bradley Fighting Vehicle System Mobility Modification which was funded in the Bradley Program Line (G80718). Funding for the Bradley Program Line ended in FY 2019.

MOD 10 (Survivability Enhancements) - Provides funding to support procurement and fielding of Survivability Enhancements including, but not limited to, the Underbelly Interim Solution (UBIS). UBIS increases the system survivability of the Bradley Fighting Vehicle against various threats.

MOD 11 (Other) - Administratively captures Congressional actions.

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Exhibit P-3a, Individual Modification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)	Modification Number / Title: GZ2400 / Bradley Program (MOD)
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ID Code (A=Service Ready, B=Not Service Ready) : A **MDAP/MAIS Code:**

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	415.740	277.259	461.385	-	461.385
Total:	Quantity	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	415.740	277.259	461.385	-	461.385

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Exhibit P-3a, Individual Modification: PB 2022 Army						Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20			P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)			Modification Number / Title: GZ2400 / Bradley Program (MOD)	
ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:			
Models of Systems Affected: M2 & M3 Bradley Vehicle Variants		Modification Type: Increase Performance			Related RDT&E PEs:		
Financial Plan	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement							
Modification Item 1 of 11: Bradley Reactive Armor							
A Kits							
Recurring							
Kit Quantity	2,676 / 765.100	- / -	- / -	- / -	- / -	- / -	
Subtotal: Recurring	2,676 / 765.100	- / -	- / -	- / -	- / -	- / -	
Subtotal: Bradley Reactive Armor	2,676 / 765.100	- / -	- / -	- / -	- / -	- / -	
Modification Item 2 of 11: BFVS High Priority Improvements							
A Kits							
Recurring							
CMED Driver Vision Upgrade	617 / 85.500	- / -	- / -	- / -	- / -	- / -	
Reset Mods	756 / 10.500	- / -	- / -	- / -	- / -	- / -	
INU/Talon	271 / 5.000	- / -	- / -	- / -	- / -	- / -	
Heat Abatement/Cargo Hatch	2,764 / 2.870	- / -	- / -	- / -	- / -	- / -	
High Priority Mods	- / 1273.281	- / 143.899	- / 52.983	- / 29.634	- / -	- / 29.634	
Urban Survivability Mods	5,276 / 2,098.985	- / -	- / -	- / -	- / -	- / -	
Subtotal: Recurring	9,684 / 2,476.136	- / 143.899	- / 52.983	- / 29.634	- / -	- / 29.634	
Subtotal: BFVS High Priority Improvements	9,684 / 2,476.136	- / 143.899	- / 52.983	- / 29.634	- / -	- / 29.634	
Modification Item 3 of 11: Training Equipment Devices							
A Kits							
Recurring							
Training Equipment	- / 137.986	- / 1.300	- / 17.981	- / 1.500	- / -	- / 1.500	
Subtotal: Recurring	- / 137.986	- / 1.300	- / 17.981	- / 1.500	- / -	- / 1.500	
Non-Recurring							
Hardware	- / 88.634	- / -	- / -	27 / 40.191	- / -	27 / 40.191	
Subtotal: Non-Recurring	- / 88.634	- / -	- / -	27 / 40.191	- / -	27 / 40.191	
Subtotal: Training Equipment Devices	- / 126.620	- / 1.300	- / 17.981	27 / 41.691	- / -	27 / 41.691	
Modification Item 4 of 11: ODS Situational Awareness							
A Kits							
Recurring							
ODS Situational Awareness	770 / 1,199.553	- / -	- / -	- / -	- / -	- / -	

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Exhibit P-3a, Individual Modification: PB 2022 Army					Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20			P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)		Modification Number / Title: GZ2400 / Bradley Program (MOD)	
ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:		
Models of Systems Affected: M2 & M3 Bradley Vehicle Variants		Modification Type: Increase Performance			Related RDT&E PEs:	
Financial Plan	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
IBAS Refresh	- / 8.850	- / -	- / -	- / -	- / -	- / -
ODS-SA VEHICLE VERSION IDENTIFICATION	- / 12.500	- / -	- / -	- / -	- / -	- / -
<i>Subtotal: Recurring</i>	770 / 1,220.903	- / -	- / -	- / -	- / -	- / -
<i>Subtotal: ODS Situational Awareness</i>	770 / 1,220.903	- / -	- / -	- / -	- / -	- / -
Modification Item 5 of 11: Program/Engineering Support						
A Kits						
Recurring						
Government PM support	- / 183.096	- / 19.615	- / 20.157	- / 19.630	- / -	- / 19.630
Contractor PM Support	- / 119.516	- / 5.127	- / 5.050	- / 4.908	- / -	- / 4.908
<i>Subtotal: Recurring</i>	- / 302.612	- / 24.742	- / 25.207	- / 24.538	- / -	- / 24.538
<i>Subtotal: Program/Engineering Support</i>	- / 302.612	- / 24.742	- / 25.207	- / 24.538	- / -	- / 24.538
Modification Item 6 of 11: BFVS Track and Suspension Upgrade						
A Kits						
Recurring						
BFVS ECP 1 Modification	2,115 / 386.934	414 / 71.838	414 / 76.125	401 / 75.258	- / -	401 / 75.258
<i>Subtotal: Recurring</i>	2,115 / 386.934	414 / 71.838	414 / 76.125	401 / 75.258	- / -	401 / 75.258
<i>Subtotal: BFVS Track and Suspension Upgrade</i>	2,115 / 386.934	414 / 71.838	414 / 76.125	401 / 75.258	- / -	401 / 75.258
Modification Item 7 of 11: BFVS Mobility Modification						
A Kits						
Recurring						
BFVS A4 Modification	211 / 601.069	74 / 212.820	- / 92.192	67 / 279.684	- / -	67 / 279.684
<i>Subtotal: Recurring</i>	211 / 601.069	74 / 212.820	- / 92.192	67 / 279.684	- / -	67 / 279.684
<i>Subtotal: BFVS Mobility Modification</i>	211 / 601.069	74 / 212.820	- / 92.192	67 / 279.684	- / -	67 / 279.684
Modification Item 8 of 11: Conversion to M2						
A Kits						
Recurring						
Conversion M3-M2	195 / 132.245	- / -	- / -	- / -	- / -	- / -
Fielding	- / 5.942	- / -	- / -	- / -	- / -	- / -
<i>Subtotal: Recurring</i>	195 / 138.187	- / -	- / -	- / -	- / -	- / -
<i>Subtotal: Conversion to M2</i>	195 / 138.187	- / -	- / -	- / -	- / -	- / -

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Exhibit P-3a, Individual Modification: PB 2022 Army						Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20			P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)			Modification Number / Title: GZ2400 / Bradley Program (MOD)	
ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:			
Models of Systems Affected: M2 & M3 Bradley Vehicle Variants		Modification Type: Increase Performance			Related RDT&E PEs:		
Financial Plan	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Modification Item 9 of 11: Braking Safety/ Transmission Industrial Base							
A Kits							
Recurring							
Transmission	266 / 87.834	- / -	- / -	- / -	- / -	- / -	
<i>Subtotal: Recurring</i>	266 / 87.834	- / -	- / -	- / -	- / -	- / -	
<i>Subtotal: Braking Safety/Transmission Industrial Base</i>	266 / 87.834	- / -	- / -	- / -	- / -	- / -	
Modification Item 10 of 11: Survivability Enhancements							
B Kits							
Recurring							
Underbelly Interium Solution (UBIS)	- / -	- / -	304 / 22.771	138 / 10.580	- / -	138 / 10.580	
<i>Subtotal: Recurring</i>	- / -	- / -	304 / 22.771	138 / 10.580	- / -	138 / 10.580	
<i>Subtotal: Survivability Enhancements</i>	- / -	- / -	304 / 22.771	138 / 10.580	- / -	138 / 10.580	
Modification Item 11 of 11: Other							
A Kits							
Non-Recurring							
Kits	- / 102.480	- / 61.141	- / -	- / -	- / -	- / -	
<i>Subtotal: Non-Recurring</i>	- / 102.480	- / 61.141	- / -	- / -	- / -	- / -	
<i>Subtotal: Other</i>	- / 102.480	- / 61.141	- / -	- / -	- / -	- / -	
<i>Subtotal: Procurement, All Modification Items</i>	15,917 / 6,207.875	488 / 415.740	718 / 277.259	633 / 461.385	- / -	633 / 461.385	
Installation							
Modification Item 3 of 11: Training Equipment Devices	- / -	- / -	- / -	27 / -	- / -	27 / -	
Modification Item 6 of 11: BFVS Track and Suspension Upgrade	2,115 / -	414 / -	414 / -	401 / -	- / -	401 / -	
Modification Item 7 of 11: BFVS Mobility Modification	- / -	85 / -	126 / -	74 / -	- / -	74 / -	
Modification Item 8 of 11: Conversion to M2	195 / -	- / -	- / -	- / -	- / -	- / -	
Modification Item 10 of 11: Survivability Enhancements	- / -	- / -	- / -	304 / -	- / -	304 / -	
<i>Subtotal: Installation</i>	2,310 / -	499 / -	540 / -	806 / -	- / -	806 / -	
Total							
Total Cost (Procurement + Support + Installation)	6,207.875	415.740	277.259	461.385	-	461.385	

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20		P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)	
Modification Number / Title: GZ2400 / Bradley Program (MOD)			
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:	
Modification Item 1 of 11: Bradley Reactive Armor			
Manufacturer Information			
Manufacturer Name: GDATP		Manufacturer Location: Burlington, VT	
Administrative Leadtime (in Months):		Production Leadtime (in Months):	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates			
Delivery Dates			
Installation Information			
Method of Implementation (Organic): Contractor		Installation Quantity: 0	

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20		P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)	
Modification Number / Title: GZ2400 / Bradley Program (MOD)			
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:	
Modification Item 2 of 11: BFVS High Priority Improvements			
Manufacturer Information			
Manufacturer Name: Various		Manufacturer Location: Various	
Administrative Leadtime (in Months): 5		Production Leadtime (in Months): 12	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates	Mar 2020	Mar 2021	Mar 2022
Delivery Dates	Mar 2021	Mar 2022	Mar 2023
Installation Information			
Method of Implementation (Organic): Contractor		Installation Quantity: 0	

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Exhibit P-3a, Individual Modification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)	Modification Number / Title: GZ2400 / Bradley Program (MOD)
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ID Code (A=Service Ready, B=Not Service Ready) : A **MDAP/MAIS Code:**

Modification Item 3 of 11: Training Equipment Devices

Manufacturer Information

Manufacturer Name: TBD		Manufacturer Location: TBD	
Administrative Leadtime (in Months): 6		Production Leadtime (in Months): 12	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates	Feb 2020	Feb 2021	Apr 2022
Delivery Dates	Feb 2021	Feb 2022	Apr 2023

Installation Information

Method of Implementation: Contractor

Installation Cost	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	0 / 0.000	- / -	- / -	- / -	- / -	- / -
FY 2020	0 / 0.000	- / -	- / -	- / -	- / -	- / -
FY 2021	0 / 0.000	- / -	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	- / -	27 / 0.000	- / -	27 / 0.000
Total	- / -	- / -	- / -	27 / 0.000	- / -	27 / 0.000

Installation Schedule

	PYS	FY 2020				FY 2021				FY 2022			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	-	-	-	-	-	-	-	-	-	-	-	27	-
Out	-	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20		P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)	
Modification Number / Title: GZ2400 / Bradley Program (MOD)			
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:	
Modification Item 4 of 11: ODS Situational Awareness			
Manufacturer Information			
Manufacturer Name: BAE		Manufacturer Location: YORK, PA	
Administrative Leadtime (in Months):		Production Leadtime (in Months):	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates			
Delivery Dates			
Installation Information			
Method of Implementation (Organic): Contractor		Installation Quantity: 0	

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20		P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)	
Modification Number / Title: GZ2400 / Bradley Program (MOD)			
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:	
Modification Item 5 of 11: Program/Engineering Support			
Manufacturer Information			
Manufacturer Name: N/A		Manufacturer Location: WARREN, MI	
Administrative Leadtime (in Months): 2		Production Leadtime (in Months): 1	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates	Dec 2019	Dec 2020	Dec 2021
Delivery Dates	Jan 2020	Jan 2021	Jan 2022
Installation Information			
Method of Implementation (Organic): x		Installation Quantity: 0	

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Exhibit P-3a, Individual Modification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)	Modification Number / Title: GZ2400 / Bradley Program (MOD)
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ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Modification Item 6 of 11: BFVS Track and Suspension Upgrade

Manufacturer Information

Manufacturer Name: Loc Performance Products Inc./Other		Manufacturer Location: Various	
Administrative Leadtime (in Months):		Production Leadtime (in Months): 13	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates	Dec 2019	Dec 2020	Dec 2021
Delivery Dates	Jan 2021	Jan 2022	Jan 2023

Installation Information

Method of Implementation: Contractor

Installation Cost	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Prior Years	1,701 / 0.000	- / -	- / -	- / -	- / -	- / -
FY 2020	414 / 0.000	- / -	- / -	- / -	- / -	- / -
FY 2021	- / -	414 / 0.000	- / -	- / -	- / -	- / -
FY 2022	- / -	- / -	414 / 0.000	- / -	- / -	- / -
Total	2,115 / 0.000	414 / 0.000	414 / 0.000	401 / 0.000	- / -	401 / 0.000

Installation Schedule

	PYS	FY 2020				FY 2021				FY 2022			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	2,097	432	-	-	-	414	-	-	-	401	-	-	-
Out	1,425	87	86	104	104	103	103	103	104	104	103	103	104

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Exhibit P-3a, Individual Modification: PB 2022 Army							Date: May 2021							
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20					P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)					Modification Number / Title: GZ2400 / Bradley Program (MOD)				
ID Code (A=Service Ready, B=Not Service Ready) : A							MDAP/MAIS Code:							
Modification Item 7 of 11: BFVS Mobility Modification														
Manufacturer Information														
Manufacturer Name: BAE							Manufacturer Location: York, PA							
Administrative Leadtime (in Months): 6							Production Leadtime (in Months): 12							
Dates			FY 2020				FY 2021				FY 2022			
Contract Dates			Jun 2020								Mar 2022			
Delivery Dates			Dec 2021								Sep 2023			
Installation Information														
Method of Implementation: Contractor														
Installation Cost		Prior Years		FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total		
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		
Prior Years		- / -		85 / 0.000		126 / 0.000		- / -		- / -		- / -		
FY 2020		0 / 0.000		- / -		- / -		- / -		- / -		- / -		
FY 2021		0 / 0.000		- / -		- / -		- / -		- / -		- / -		
FY 2022		- / -		- / -		- / -		74 / 0.000		- / -		74 / 0.000		
Total		- / -		85 / 0.000		126 / 0.000		74 / 0.000		- / -		74 / 0.000		
Installation Schedule														
	PYS	FY 2020				FY 2021				FY 2022				
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
In	85	20	21	5	14	10	10	17	-	-	21	21	21	
Out	-	-	3	20	12	33	33	14	10	10	21	42	42	

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Exhibit P-3a, Individual Modification: PB 2022 Army							Date: May 2021						
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20				P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)				Modification Number / Title: GZ2400 / Bradley Program (MOD)					
ID Code (A=Service Ready, B=Not Service Ready) : A							MDAP/MAIS Code:						
Modification Item 8 of 11: Conversion to M2													
Manufacturer Information													
Manufacturer Name: BAE							Manufacturer Location: YORK, PA						
Administrative Leadtime (in Months):							Production Leadtime (in Months):						
Dates		FY 2020				FY 2021				FY 2022			
Contract Dates													
Delivery Dates													
Installation Information													
Method of Implementation: Contractor													
Installation Cost		Prior Years		FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Prior Years		195 / 0.000		- / -		- / -		- / -		- / -		- / -	
FY 2020		0 / 0.000		- / -		- / -		- / -		- / -		- / -	
FY 2021		0 / 0.000		- / -		- / -		- / -		- / -		- / -	
FY 2022		0 / 0.000		- / -		- / -		- / -		- / -		- / -	
Total		195 / 0.000		- / -		- / -		- / -		- / -		- / -	
Installation Schedule													
	PYS	FY 2020				FY 2021				FY 2022			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	195	-	-	-	-	-	-	-	-	-	-	-	-
Out	195	-	-	-	-	-	-	-	-	-	-	-	-

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20		P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)	
Modification Number / Title: GZ2400 / Bradley Program (MOD)			
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:	
Modification Item 9 of 11: Braking Safety/Transmission Industrial Base			
Manufacturer Information			
Manufacturer Name: L3COM		Manufacturer Location: MUSKEGON, MI	
Administrative Leadtime (in Months):		Production Leadtime (in Months):	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates			
Delivery Dates			
Installation Information			
Method of Implementation (Organic): Contractor		Installation Quantity: 0	

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Exhibit P-3a, Individual Modification: PB 2022 Army							Date: May 2021						
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20				P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)				Modification Number / Title: GZ2400 / Bradley Program (MOD)					
ID Code (A=Service Ready, B=Not Service Ready) : A							MDAP/MAIS Code:						
Modification Item 10 of 11: Survivability Enhancements													
Manufacturer Information													
Manufacturer Name: TBD							Manufacturer Location: TBD						
Administrative Leadtime (in Months): 10							Production Leadtime (in Months): 6						
Dates		FY 2020				FY 2021				FY 2022			
Contract Dates						Aug 2020							
Delivery Dates						Feb 2022							
Installation Information													
Method of Implementation: Contractor													
Installation Cost		Prior Years		FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	
		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)		Qty (Each) / Total Cost (\$ M)	
Prior Years		0 / 0.000		- / -		- / -		- / -		- / -		- / -	
FY 2020		0 / 0.000		- / -		- / -		- / -		- / -		- / -	
FY 2021		0 / 0.000		- / -		- / -		- / -		- / -		- / -	
FY 2022		- / -		- / -		- / -		304 / 0.000		- / -		304 / 0.000	
Total		- / -		- / -		- / -		304 / 0.000		- / -		304 / 0.000	
Installation Schedule													
	PYS	FY 2020				FY 2021				FY 2022			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
In	-	-	-	-	-	-	-	304	-	-	-	138	
Out	-	-	-	-	-	-	-	-	76	76	76	76	

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20		P-1 Line Item Number / Title: 1678GZ2400 / Bradley Program (MOD)	
Modification Number / Title: GZ2400 / Bradley Program (MOD)			
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:	
Modification Item 11 of 11: Other			
Manufacturer Information			
Manufacturer Name: RAA		Manufacturer Location: TBD	
Administrative Leadtime (in Months):		Production Leadtime (in Months): 3	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates	Sep 2020		
Delivery Dates	Nov 2020		
Installation Information			
Method of Implementation (Organic): Rapid Acquisition Authority/ Nat Commission on Military Aviation Safety		Installation Quantity: 0	

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:** 2072GA0400 / M109 FOV Modifications

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0604854A **Other Related Program Elements:** 0604854A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,146.189	25.756	26.893	2.534	-	2.534	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	16.321	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,129.868	25.756	26.893	2.534	-	2.534	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	16.321	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2,146.189	25.756	26.893	2.534	-	2.534	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The M109 Family of Vehicles (FOV) Modifications line consists of the M109A6 Paladin Self-Propelled Howitzer (SPH) and the M992A2 Field Artillery Ammunition Supply Vehicle (FAASV), the M109A7 Self-Propelled Howitzer (SPH) and M992A3 Carrier, Ammunition, Tracked (CAT). The funding profile provides for the engineering design, testing, hardware procurement, and application in support of improvements to resolve problems identified in the field and approved by the Materiel Developer and Combat Developer for fielded M109 Family of Vehicles (FOV). These improvements address maintaining operational readiness rates, improving vehicle safety and operation, and integrate new equipment. Funding also supports aspects of program management necessary to support the field fleet of 689 Self-Propelled Howitzers (SPHs) and 689 Field Artillery Ammunition Supply Vehicles (FAASVs) / Carrier, Ammunition, Tracked (CATs) in 16 Active Duty Army and National Guard Battalions organic to Armored Brigade Combat Team (ABCT); 10 Battalions organic to Army Fires Brigades; 3 Rotational unit sets; 4 Army Prepositioned Stock sets; 2 Institutional Training Sites, 2 Combat Training Centers, and other facility vehicles for System Technical Support (STS) work for development and qualification of proposed engineering changes and technical improvements. Engineering Change Proposals (ECPs) will be applied through a modification work order and procured for the M109 Family of Vehicles.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	25.756	26.893	2.534	-	2.534	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	25.756	26.893	2.534	-	2.534	-	-	-	-

Justification:

FY 2022 funding total includes \$2.753 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 base procurement funding in the amount of \$2.753 million supports M109 Family of Vehicles (FOV) modifications, program office requirements and Systems Technical Support (STS) contractor support for the Self-Propelled Family of Howitzers. Program management is for the oversight of Other Governmental Agencies (OGAs) that provide material support to the system and the fielded units to ensure configuration management; provides the analysis and root cause of safety and non-safety related field failures; provides M109 Family of Vehicles (FOV) Depot Overhaul support as needed; provides planning

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles		P-1 Line Item Number / Title: 2072GA0400 / M109 FOV Modifications
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0604854A	Other Related Program Elements: 0604854A
Line Item MDAP/MAIS Code: N/A		
<p>and execution for obsolescence of parts, sub-systems and systems; develop and coordinate shrinking supply base mitigation strategies with item managers. The program office works to lower operation and sustainment costs and improve unit readiness by analyzing data and determining solutions to solve the field's problem sets. Manages the Systems Technical Support/Sustainment Systems Technical Support (STS/SSTS) contract that provides direct support to the program and the field. Contractor provides the direct engineering support required to integrate modification kits; provides the logistical support to provision, source, and support the field with the material solutions/changes. Contractor also updates/corrects all system technical data, provisioning data, technical manuals, and Interactive-Electronic Technical Manuals (IETMs). Contractor provides emergency field support to the Government as required for essential mission accomplishment.</p> <p>In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity:
 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:**
 2073GZ0410 / Paladin Integrated Management (PIM)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0210609A

Line Item MDAP/MAIS Code: 466

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	349	96	31	25	-	25	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,641.552	553.425	463.425	446.430	-	446.430	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,641.552	553.425	463.425	446.430	-	446.430	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2,641.552	553.425	463.425	446.430	-	446.430	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	7,568.917	5,764.844	14,949.194	17,857.200	-	17,857.200	-	-	-	-	-	-

Description:

Paladin Integrated Management (PIM) is an ACAT 1C Acquisition Program. The program will replace the current fleet of M109 Family of Vehicles (FOV) consisting of the M109A6 Self Propelled Howitzer and the M992A2 Field Artillery Ammunition Supply Vehicle (FAASV). PIM is an Army Modernization Program that addresses a critical capability gap created by the Non-Line of Sight Cannon termination in June of 2009, as well as, obsolescence and size/weight and power (SWaP) issues in the M109 FOV current fleet. The PIM system integrates current Bradley Fighting Vehicle suspension and drive train items, Future Combat Systems (FCS) developed Electric Gun Drive systems and current fleet armament systems into a new chassis that provides better force protection, survivability and mobility over the antecedent vehicles (M109A6 AND M992A2). PIM is a two vehicle system: The M109A7 Self Propelled Howitzer (SPH) and the M992A3 Carrier Ammunition Tracked (CAT). The Self Propelled Howitzer (SPH) has all characteristics listed above. The Carrier Ammunition Tracked (CAT) utilizes all these same components and traits less those that relate directly to the cannon system. The PIM system replaces the current M109 FOV on a one for one basis, in the cannon fires battalions in the Armored Brigade Combat Team Formations and in the Echelons Above Brigade (EAB). The M109 Family of Vehicles (FOV) will continue fielding through FY 2033. The overall intent is to increase Soldier force protection, vehicle survivability, provide an appropriate amount of SWaP capacity to add future capabilities, reduce life cycle costs and extend the life of the M109 FOV through FY 2050, allowing for a 26 year economic life.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army									
Quantity	58	22	13	-	13	-	-	-	-
Total Obligation Authority	320.774	325.527	230.373	-	230.373	-	-	-	-
ANG									
Quantity	38	9	12	-	12	-	-	-	-
Total Obligation Authority	232.651	137.898	216.057	-	216.057	-	-	-	-
Total: Secondary Distribution									
Quantity	96	31	25	-	25	-	-	-	-
Total Obligation Authority	553.425	463.425	446.430	-	446.430	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity:
 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:**
 2073GZ0410 / Paladin Integrated Management (PIM)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0210609A

Line Item MDAP/MAIS Code: 466

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	GZ0410 / Paladin Integrated Management (PIM)	P-5a, P-21	A		349 / 2,641.552	96 / 553.425	31 / 463.425	25 / 446.430	- / -	25 / 446.430
P-40	Total Gross/Weapon System Cost				349 / 2,641.552	96 / 553.425	31 / 463.425	25 / 446.430	- / -	25 / 446.430

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY 2022 funding total includes \$446.430 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Base Procurement dollars in the amount of \$446.430 million supports all aspects of the PIM Full Rate Production (FRP) program. Funding also supports the Government Program Management support required to provide oversight on contractor production operations that include: Quality Process Management, Program Management Reviews (weekly, monthly, and quarterly), Government Furnished Property and Material Management, and engineering activities resulting from waivers/deviations/problem resolution. Funding also supports work being completed at the Anniston Army Depot (ANAD) in Anniston, AL to provide refurbished breeches to the vehicle prime production contractor as well as the contractor operations needed to sustain production operations for the acquisition of materials/components/end items, manufacturing and assembly of sub-systems, and the integration, test, and check out operations required to produce all 25 vehicle sets funded with FY 2022 Base Procurement funding. The unit cost represents a cost per vehicle set ((1 Self Propelled Howitzer (SPH) and 1 Carrier Ammunition Tracked (CAT)). The M109 Family of Vehicles procurement continues to support the supplier/vendor industrial base with fielding in FY 2024.

In FY 2022, funding in the amount of \$0.183 million for manpower was realigned to Operations and Maintenance. Program support costs have been accurately updated to reflect the realignments.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

Army Acquisition Objective (AAO): 689 sets

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 2073GZ0410 / Paladin Integrated Management (PIM)	Item Number / Title [DODIC]: GZ0410 / Paladin Integrated Management (PIM)

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (Units in Each)	349	96	31	25	-	25
Gross/Weapon System Cost (\$ in Millions)	2,641.552	553.425	463.425	446.430	-	446.430
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	2,641.552	553.425	463.425	446.430	-	446.430
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	2,641.552	553.425	463.425	446.430	-	446.430

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	7,568.917	5,764.844	14,949.194	17,857.200	-	17,857.200

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
SYS ENG/ PROG MGMT (CONTRACTOR)	-	-	15.612	-	-	10.392	-	-	18.386	-	-	18.638	-	-	-	-	-	18.638
SYSTEM TECHNICAL SUPPORT	-	-	221.141	-	-	36.777	-	-	46.083	-	-	46.819	-	-	-	-	-	46.819
SYS TEST & EVALUATION (CONTRACTOR)	-	-	24.322	-	-	1.567	-	-	2.144	-	-	1.954	-	-	-	-	-	1.954
SYS ENG/ PROG MGMT (GOVERNMENT)	-	-	108.806	-	-	20.462	-	-	20.327	-	-	20.721	-	-	-	-	-	20.721
SYS TEST & EVALUATION (GOVERNMENT)	-	-	10.463	-	-	-	-	-	1.846	-	-	0.996	-	-	-	-	-	0.996
TRANSPORTATION	-	-	1.221	-	-	0.941	-	-	0.964	-	-	1.350	-	-	-	-	-	1.350
Subtotal: Recurring Cost	-	-	381.565	-	-	70.139	-	-	89.750	-	-	90.478	-	-	-	-	-	90.478
Non Recurring Cost																		
PRODUCTION FACILITIZATION	-	-	31.474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	31.474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Flyaway Cost	-	-	413.039	-	-	70.139	-	-	89.750	-	-	90.478	-	-	-	-	-	90.478
Hardware Cost																		

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Exhibit P-5, Cost Analysis: PB 2022 Army													Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20						P-1 Line Item Number / Title: 2073GZ0410 / Paladin Integrated Management (PIM)						Item Number / Title [DODIC]: GZ0410 / Paladin Integrated Management (PIM)						

ID Code (A=Service Ready, B=Not Service Ready) : A										MDAP/MAIS Code:							
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Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Recurring Cost																		
MANUFACTURING ⁽¹⁾	7,720.593	231	1,783.457	7,022.396	48	337.075	8,801.677	31	272.852	10,329.560	25	258.239	-	-	-	10,329.560	25	258.239
GOVERNMENT FURNISHED EQUIPMENT (GFE)	-	-	247.640	-	-	66.463	-	-	44.827	-	-	40.487	-	-	-	-	-	40.487
THEATRE PROVIDED EQUIPMENT	-	-	23.783	-	-	5.592	-	-	16.484	-	-	16.335	-	-	-	-	-	16.335
RECURRING PRODUCTION - OTHER	-	-	15.317	-	-	26.263	-	-	7.744	-	-	6.260	-	-	-	-	-	6.260
ENGINEERING CHANGE ORDERS	-	-	43.342	-	-	13.915	-	-	15.769	-	-	16.638	-	-	-	-	-	16.638
<i>Subtotal: Recurring Cost</i>	-	-	2,113.539	-	-	449.308	-	-	357.676	-	-	337.959	-	-	-	-	-	337.959
<i>Subtotal: Hardware Cost</i>	-	-	2,113.539	-	-	449.308	-	-	357.676	-	-	337.959	-	-	-	-	-	337.959
Support - Contractor Logistics Support (CLS) Cost																		
Oversight	-	-	0.197	-	-	1.230	-	-	1.139	-	-	1.155	-	-	-	-	-	1.155
<i>Subtotal: Support - Contractor Logistics Support (CLS) Cost</i>	-	-	0.197	-	-	1.230	-	-	1.139	-	-	1.155	-	-	-	-	-	1.155
Support - Data Cost																		
Technical Publications	-	-	20.288	-	-	-	-	-	1.356	-	-	1.375	-	-	-	-	-	1.375
<i>Subtotal: Support - Data Cost</i>	-	-	20.288	-	-	-	-	-	1.356	-	-	1.375	-	-	-	-	-	1.375
Support - Initial Spares and Repair Parts Cost																		
Initial Spares and Repair Parts	-	-	37.305	-	-	14.271	-	-	4.587	-	-	6.952	-	-	-	-	-	6.952
<i>Subtotal: Support - Initial Spares and Repair Parts Cost</i>	-	-	37.305	-	-	14.271	-	-	4.587	-	-	6.952	-	-	-	-	-	6.952
Support - Initial Support Equipment (ISE) Cost																		
Support and Handling Equipment	-	-	5.447	-	-	2.702	-	-	1.920	-	-	2.058	-	-	-	-	-	2.058
<i>Subtotal: Support - Initial Support Equipment (ISE) Cost</i>	-	-	5.447	-	-	2.702	-	-	1.920	-	-	2.058	-	-	-	-	-	2.058
Support - New Equipment Training (NET) Cost																		
Equipment	-	-	14.312	-	-	3.293	-	-	3.533	-	-	3.582	-	-	-	-	-	3.582

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 2073GZ0410 / Paladin Integrated Management (PIM)	Item Number / Title [DODIC]: GZ0410 / Paladin Integrated Management (PIM)
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
<i>Subtotal: Support - New Equipment Training (NET) Cost</i>	-	-	14.312	-	-	3.293	-	-	3.533	-	-	3.582	-	-	-	-	-	3.582
Support - Support Equipment Cost																		
Maintenance Equipment	-	-	24.635	-	-	2.493	-	-	3.464	-	-	2.871	-	-	-	-	-	2.871
<i>Subtotal: Support - Support Equipment Cost</i>	-	-	24.635	-	-	2.493	-	-	3.464	-	-	2.871	-	-	-	-	-	2.871
Support - Training Cost																		
Equipment	-	-	12.790	-	-	9.989	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Training Cost</i>	-	-	12.790	-	-	9.989	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	7,568.917	349	2,641.552	5,764.844	96	553.425	14,949.194	31	463.425	17,857.200	25	446.430	-	-	-	17,857.200	25	446.430

Remarks:

Unit Cost:

- FY 2021: Increased unit cost in unit manufacturing cost estimate (which has not yet been negotiated) is due to higher than anticipated fall-out of planned refurbishment components on returning M109A6 seed assets and associated overruns in the Cost Plus Fixed Fee (CPFF) contract line items.

- FY 2022: Increased unit cost due to reduced annual production throughput rate of 25 vehicle sets which is similar to Minimum Sustainment Rate (MSR)

Quantities:

- FY 2020: Quantity of (96) was doubled and will be corrected to (48) in October when updates for actual execution are made and prior to the submission of the FY 2023 President's Budget.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	58	22	13	-	13
	Total Obligation Authority	320.774	325.527	230.373	-	230.373
ANG	Quantity	38	9	12	-	12
	Total Obligation Authority	232.651	137.898	216.057	-	216.057
Total: Secondary Distribution	Quantity	96	31	25	-	25
	Total Obligation Authority	553.425	463.425	446.430	-	446.430

(t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army							Date: May 2021				
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20			P-1 Line Item Number / Title: 2073GZ0410 / Paladin Integrated Management (PIM)				Item Number / Title [DODIC]: GZ0410 / Paladin Integrated Management (PIM)				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
MANUFACTURING ^(†)		2020	BAE / York	SS / FPIF	TACOM, Warren, MI	Mar 2020	Feb 2023	48	7,022.396	N		
MANUFACTURING ^(†)		2021	BAE / York	SS / FPIF	TACOM, Warren, MI	Jun 2021	Feb 2024	31	8,801.677	N		
MANUFACTURING ^(†)		2022	BAE / York	SS / FPIF	TACOM, Warren, MI	Apr 2022	Dec 2024	25	10,329.560	N		

^(†) indicates the presence of a P-21

Remarks:

Quantities:

- FY 2018: Production Option 1 awarded 65 vehicle sets. 48 vehicle sets were awarded in September 2018, an additional 12 vehicles sets in December 2019, and an additional 5 sets in March 2020.
- FY 2019: Production Option 2 awarded 53 vehicle sets. 48 vehicle sets were awarded in December 2019 and an additional 5 vehicle sets in March 2020.
- FY 2020: Production Option 2 will award 48 vehicle sets. Production Option 2 awarded 38 vehicle sets in March 2020 and will award an additional 10 vehicle sets in June 2021.
- FY 2021: Follow-on Award of 31 vehicle sets in June 2021.
- FY 2022: Follow-on Award of 25 vehicle sets in April 2022.

Unit Cost:

- FY 2021: Increased unit cost in unit manufacturing cost estimate (which has not yet been negotiated) is due to higher than anticipated fall-out of planned refurbishment components on returning M109A6 seed assets and associated overruns in the Cost Plus Fixed Fee (CPFF) contract line items.
- FY 2022: Increased unit cost due to reduced annual production throughput rate of 25 vehicle sets which is similar to Minimum Sustainment Rate (MSR)

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Exhibit P-21, Production Schedule: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 2073GZ0410 / Paladin Integrated Management (PIM)	Item Number / Title [DODIC]: GZ0410 / Paladin Integrated Management (PIM)

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2020															Fiscal Year 2021												BALANCE		
O C C O #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020															Calendar Year 2021												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				
MANUFACTURING																																		
Prior Years Deliveries: 231																																		
1	2020	ARMY	48	0	48																												48	
1	2021	ARMY	31	0	31																												31	
1	2022	ARMY	25	0	25																												25	

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2022 Army														Date: May 2021																											
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20														P-1 Line Item Number / Title: 2073GZ0410 / Paladin Integrated Management (PIM)														Item Number / Title [DODIC]: GZ0410 / Paladin Integrated Management (PIM)													

Cost Elements (Units in Each)					Fiscal Year 2022														Fiscal Year 2023														B A L A N C E		
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022														Calendar Year 2023														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
MANUFACTURING																																			
Prior Years Deliveries: 231																																			
	1	2020	ARMY	48	0	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	4	4	4	16		
	1	2021	ARMY	31	0	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31		
	1	2022	ARMY	25	0	25								A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25			

UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2022 Army															Date: May 2021														
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20										P-1 Line Item Number / Title: 2073GZ0410 / Paladin Integrated Management (PIM)										Item Number / Title [DODIC]: GZ0410 / Paladin Integrated Management (PIM)									

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2024															Fiscal Year 2025															B A L A N C E		
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	Calendar Year 2024															Calendar Year 2025															
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

MANUFACTURING																																	
Prior Years Deliveries: 231																																	
1	2020	ARMY	48	32	16	4	4	4	4																							0	
1	2021	ARMY	31	0	31	-	-	-	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0
1	2022	ARMY	25	0	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	5	
						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P				

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Exhibit P-21, Production Schedule: PB 2022 Army															Date: May 2021														
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20										P-1 Line Item Number / Title: 2073GZ0410 / Paladin Integrated Management (PIM)										Item Number / Title [DODIC]: GZ0410 / Paladin Integrated Management (PIM)									

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2026													Fiscal Year 2027													BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2025	BAL DUE AS OF 1 OCT	Calendar Year 2026													Calendar Year 2027													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

MANUFACTURING

Prior Years Deliveries: 231																																	
1	2020	ARMY	48	48	0																												0
1	2021	ARMY	31	31	0																												0
1	2022	ARMY	25	20	5	2	3																									0	

						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P
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UNCLASSIFIED

Exhibit P-21, Production Schedule: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20		P-1 Line Item Number / Title: 2073GZ0410 / Paladin Integrated Management (PIM)
		Item Number / Title [DODIC]: GZ0410 / Paladin Integrated Management (PIM)

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2022	1-8-5 For 2022	MAX For 2022	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	BAE - York	2	4	5	0	15	30	45	0	15	30	45

Remarks:
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"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity:
 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:**
 3700GA0570 / Improved Recovery Vehicle (M88A2 HERCULES)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: 539

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	914	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,817.937	80.146	-	52.059	-	52.059	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,817.937	80.146	-	52.059	-	52.059	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2,817.937	80.146	-	52.059	-	52.059	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	3,083.082	-	-	-	-	-	-	-	-	-	-	-

Description:

The M88A2 Heavy Equipment Recovery Combat Utility Lift and Evacuation System (HERCULES) provides towing, winching, and hoisting operations to support battlefield single vehicle recovery (SVR) operations and evacuation of heavy tanks and other tracked combat vehicles up to 70-tons. It recovers tanks mired to differing depths, removes/replaces M1 turrets and power packs, and uprights overturned/ mired heavy combat vehicles with a 70-ton continuous pull main winch capacity. Due to the increased weight of some of the Army's major combat vehicle systems, up to 80 tons with force protection kits applied, and the loss of Single Vehicle Recovery (SVR) capabilities, the Army is on track to modernize the M88A2 Heavy Equipment Recovery Combat Utility Lift and Evacuation System (HERCULES) fleet in an effort to regain SVR. This will be accomplished by applying the Single Vehicle Recovery Engineering Change Proposal (ECP) that includes modified non developmental technologies comprising a new Power Train (Engine & Transmission), new Suspension, and Improved Track to the M88A2 vehicle resulting in the M88A3 variant vehicle. The M88A3 vehicles will bring back the operational capability of the single vehicle recovery. The increased winching and lifting capability accommodates all 80 ton Abrams variants. Without this increased capability, units must use two M88A2 Medium Recovery Vehicles to perform the necessary spectrum of recovery operations.

The M88 Family of Vehicles provides funding for the procurement of M88A3s, personnel, engineering, design, testing, hardware procurement, and application in support of improvements to resolve safety, readiness, and vehicle recovery operation issues identified in the field and approved by the Materiel Developer and Combat Developer for fielded M88 Family of Vehicles (FOV). These improvements address maintaining operational readiness rates, improving vehicle safety and operation, and integrating new equipment. Engineering Change Proposals (ECPs) will be applied through a modification work order (MWO) and procured for the M88 Family of Vehicles (FOV). Specific modifications include improvements related to engine reliability, automatic fire extinguishing system (AFES), power management system, improved automotive performance related to braking, and special tools delta kits. Funding also maintains the support for M88A2 fielding through end of FY 2024 and finalizes remaining M88A2 Safety/Reliability ECPs (Auxiliary Power Unit (APU), Quick Wins/Near Quick Wins Engine Improvements, Battery Disconnect). Funding incorporates modification into the Anniston Army Depot (ANAD) engine overhaul line and procurement of material required to support conversion of USMC M88A2 variants to Army configuration to support newly approved Maintenance Surge Team (MST) requirements.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	80.146	-	52.059	-	52.059	-	-	-	-
Total:									
Quantity	-	-	-	-	-	-	-	-	-

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles	P-1 Line Item Number / Title: 3700GA0570 / Improved Recovery Vehicle (M88A2 HERCULES)
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: 539

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Secondary Distribution	Total Obligation Authority	80.146	-	52.059	-	52.059	-	-	-	-

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UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:** 3700GA0570 / Improved Recovery Vehicle (M88A2 HERCULES)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: 539

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	GA0570 / Improved Recovery Vehicle (M88A2 HERCULES)	P-5a	A		914 / 2,817.937	- / 80.146	- / -	- / 52.059	- / -	- / 52.059
P-40	Total Gross/Weapon System Cost				914 / 2,817.937	- / 80.146	- / -	- / 52.059	- / -	- / 52.059

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 Note: M88 Modification efforts and funds in 5129G80571 / M88 FOV MODS, are realigning to 3700GA0570 / Improved Recovery Vehicle (M88A2 HERCULES), starting in FY 2022 for greater flexibility and transparency. The 3700GA0570 / Improved Recovery Vehicle (M88A2 HERCULES) did not receive funding in FY 2021, as they completed the full 933 vehicle procurement of the M88A2 HERCULES Army Acquisition Objective (AAO) in FY 2020.

FY 2022 funding total includes \$52.059 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Base procurement dollars in the amount of \$52.059 million supports the Engine Reliability Improvement converting the mechanical fuel injection system into an electronic fuel injection system, initiates procurement of the automatic fire extinguishing system and other safety improvements and maintains system technical services (STS) for the M88A2 in production. The M88A2 HERCULES new production vehicles are fielding to units through FY 2023. Plans are underway to convert to Army configuration M88A2 HERCULES from the U.S. Marine Corps. (USMC) to support fielding requirements through FY 2026 to the Maintenance Surge Teams (MST) as a new Army initiative. FY 2022 M88 FOV modifications address improvements for maintaining operational readiness rates, improving vehicle safety and operation, and integrating new equipment. The M88A2 HERCULES Engineering Change Proposals (ECPs) require application to the vehicles through a Modification Work Order (MWO). Specific modifications include safety and reliability modifications to the engine: converting the mechanical fuel injection to an electronic fuel injection system; upgrade the exhaust manifolds and turbos that have been identified as significant initiation sources during fire investigations. Additional modifications finalize the updates to the automatic fire extinguishing system (AFES), Power Management System which includes the Auxiliary Power System, special tools delta kits and improving automotive performance related to braking.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

M88A2 HERCULES Army Acquisition Objective (AAO): 933

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Exhibit P-5, Cost Analysis: PB 2022 Army						Date: May 2021		
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20			P-1 Line Item Number / Title: 3700GA0570 / Improved Recovery Vehicle (M88A2 HERCULES)			Item Number / Title [DODIC]: GA0570 / Improved Recovery Vehicle (M88A2 HERCULES)		
ID Code (A=Service Ready, B=Not Service Ready) : A						MDAP/MAIS Code:		
Resource Summary			Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (Units in Each)			914	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)			2,817.937	80.146	-	52.059	-	52.059
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)			2,817.937	80.146	-	52.059	-	52.059
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)			2,817.937	80.146	-	52.059	-	52.059
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>								
Initial Spares (\$ in Millions)			-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)			3,083.082	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
M88A2 Vehicle Manufacturing - Contractor ^(†)	2,271.691	914	2,076.326	2,789.526	19	53.001	-	-	-	-	-	-	-	-	-	-	-	-
Vehicle Manufacturing - GFE	-	-	100.954	-	-	1.350	-	-	-	-	-	-	-	-	-	-	-	-
System Technical Support	-	-	325.257	-	-	12.509	-	-	-	-	-	13.082	-	-	-	-	-	13.082
Program Management	-	-	98.636	-	-	5.150	-	-	-	-	-	4.934	-	-	-	-	-	4.934
Transportation	-	-	15.148	-	-	1.100	-	-	-	-	-	-	-	-	-	-	-	-
Fielding (TPF & NET)	-	-	94.244	-	-	2.997	-	-	-	-	-	-	-	-	-	-	-	-
Test (Production Verification Testing)	-	-	24.428	-	-	1.380	-	-	-	-	-	-	-	-	-	-	-	-
M88A1 Hull Reclamation	-	-	82.944	-	-	2.659	-	-	-	-	-	-	-	-	-	-	-	-
Modifications	-	-	-	-	-	-	-	-	-	-	-	34.043	-	-	-	-	-	34.043
<i>Subtotal: Recurring Cost</i>	-	-	2,817.937	-	-	80.146	-	-	-	-	-	52.059	-	-	-	-	-	52.059
<i>Subtotal: Flyaway Cost</i>	-	-	2,817.937	-	-	80.146	-	-	-	-	-	52.059	-	-	-	-	-	52.059
Gross/Weapon System Cost	3,083.082	914	2,817.937	-	-	80.146	-	-	-	-	-	52.059	-	-	-	-	-	52.059

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 3700GA0570 / Improved Recovery Vehicle (M88A2 HERCULES)	Item Number / Title [DODIC]: GA0570 / Improved Recovery Vehicle (M88A2 HERCULES)

ID Code (A=Service Ready, B=Not Service Ready) : A **MDAP/MAIS Code:**

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	80.146	-	52.059	-	52.059
Total:	Quantity	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	80.146	-	52.059	-	52.059

(t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army							Date: May 2021				
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20			P-1 Line Item Number / Title: 3700GA0570 / Improved Recovery Vehicle (M88A2 HERCULES)				Item Number / Title [DODIC]: GA0570 / Improved Recovery Vehicle (M88A2 HERCULES)				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
M88A2 Vehicle Manufacturing - Contractor	✓	2020	BAE Systems / York, PA	SS / FFP	TACOM	Jul 2020	Jun 2022	19	2,789.526	Y		
M88A2 Vehicle Manufacturing - Contractor		2022	BAE Systems / York, PA	SS / Various	Detroit Arsenal-OTA	Jul 2022	Jan 2024	0	0.000	Y		

Remarks:
There was no FY 2021 request for funding.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:** 4520GZ3250 / Assault Bridge (Mod)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	357.579	22.021	5.074	2.136	-	2.136	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	357.579	22.021	5.074	2.136	-	2.136	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	357.579	22.021	5.074	2.136	-	2.136	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	89,394.750	2,202.100	281.889	534.000	-	534.000	-	-	-	-	-	-

Description:

The Assault Bridge (MOD) budget line funds the modifications of assault bridging equipment. It is used to procure hardware, materials, and hardware installation cost required to complete the modification. Modifications are performed to improve survivability, correct safety deficiencies, increase mission capabilities, extend the useful life, improve supportability, upgrade existing technology, increase efficiency, improve readiness, reduce risk of obsolescence and to meet new legal and regulatory requirements. By modifying existing equipment, the Army maintains a ready, supportable inventory of equipment that meets current requirements and regulations at a cost considerably below that of buying new equipment.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	22.021	5.074	2.136	-	2.136	-	-	-	-
Total:									
Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	22.021	5.074	2.136	-	2.136	-	-	-	-

Justification:

FY 2022 funding total includes \$0 for Base, \$0 for Direct War, and \$2.136 million for Enduring Costs in the Base Budget.

FY 2022 Base procurement dollars in the amount of \$2.136 million supports the conversion and upgrade of four (4) Armored Vehicle Launched Bridges (AVLB) to Military Load Classification (MLC) 115 rated Heavy Assault Scissor Bridges (HASB) for the European Deterrence Initiative (EDI).

Funding supports the organic industrial base with work to be performed at Anniston Army Depot, including purchase of long lead material and subsequent production effort.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles		P-1 Line Item Number / Title: 4520GZ3250 / Assault Bridge (Mod)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:** 4872G82925 / Assault Breacher Vehicle

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	139	6	4	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	563.547	31.697	19.500	-	-	-	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	563.547	31.697	19.500	-	-	-	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	563.547	31.697	19.500	-	-	-	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	4,054.295	5,282.833	4,875.000	-	-	-	-	-	-	-	-	-

Description:

The Assault Breacher Vehicle (ABV) is a tracked combat engineer vehicle for the Army Armored Brigade Combat Team (ABCT). It is designed to breach minefields and barrier obstacles to enable tanks and infantry of the ABCT to maintain pace in offensive combat operations. The ABV provides crew protection and vehicle survivability equal to the M1A1 Abrams tank hull and has the speed and mobility to keep pace with the heavy maneuver force. The ABV is assigned to engineer companies in ABCTs. Its hull is an overhauled M1A1 Abrams tank hull with modifications for its new mission. Its mission equipment includes two Linear Demolition Charge Systems (modified Mine Clearing Line Charge (MICLC) systems), interchangeable Engineer Breaching System hardware consisting of a Full Width Mine Plow and a Combat Dozer Blade, a Lane Marking System to automatically mark a cleared path behind the ABV, and an integrated day/night vision system. The ABV is fabricated at Anniston Army Depot (ANAD).

The ABV Army Acquisition Objective (AAO) is 141.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	6	4	-	-	-	-	-	-	-
	Total Obligation Authority	31.697	19.500	-	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	6	4	-	-	-	-	-	-	-
	Total Obligation Authority	31.697	19.500	-	-	-	-	-	-	-

Justification:

There is no FY 2022 budget request for this funding line.

FY 2022 procurement funding has been realigned to the Line 2 / 4872G84900 / Assault Breacher Vehicle (ABV) which established a parent and two subordinate baby lines for this system to delineate between production and modification efforts to the system for greater transparency.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles		P-1 Line Item Number / Title: 4872G82925 / Assault Breacher Vehicle
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.		

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:** 5129G80571 / M88 FOV MODS

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0203735A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	130.790	4.500	18.382	-	-	-	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	130.790	4.500	18.382	-	-	-	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	130.790	4.500	18.382	-	-	-	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The M88 Fleet Modification Program provided funding for personnel, engineering design, testing, hardware procurement, and application in support of improvements to resolve problems identified in the field and be approved by the Materiel and Combat Developer for fielded M88 family of vehicles (FOV). These improvements addressed maintaining operational readiness rates, improving vehicle safety and operation, and integrating new equipment. Modifications included improvements related to engine reliability, automatic fire extinguishing system (AFES), power management system, improved automotive performance related to braking, and special tools delta kits.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	4.500	18.382	-	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	4.500	18.382	-	-	-	-	-	-	-

Justification:

There is no FY 2022 budget request for this funding line.

The M88 Modification efforts and funding for the 5129G80571 / M88 FOV MODS, are realigned to 3700GA0570 / Improved Recovery Vehicle (M88A2 HERCULES), starting in FY 2022.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:** 5225GZ3001 / Joint Assault Bridge

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0604804A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: X33

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	75	32	-	23	-	23	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	404.858	151.123	-	110.773	-	110.773	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	404.858	151.123	-	110.773	-	110.773	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	404.858	151.123	-	110.773	-	110.773	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	5,398.107	4,722.594	-	4,816.217	-	4,816.217	-	-	-	-	-	-

Description:

The Joint Assault Bridge (JAB) replaces the existing Wolverine and the M48A5/M60 series chassis Armored Vehicle Launch Bridge (AVLB) to meet current maneuver force survivability, suitability and supportability requirements. The Joint Assault Bridge (JAB) is an M1A1 Abrams Chassis-based engineer vehicle with a heavy M1A2 Abrams suspension that launches and retrieves the 18.3 meter Heavy Assault Scissor Bridge (HASB), which is currently rated at Military Load Class (MLC) 115. Armored Vehicle Launch Bridges (AVLBs) are upgraded to the Military Load Class 115 Heavy Assault Scissor Bridge (HASB) as part of the Joint Assault Bridge (JAB) program at Anniston Army Depot (ANAD). The Joint Assault Bridge (JAB) system will be employed with Army Armored Brigade Combat Teams (ABCT) in the Brigade Engineer Battalions (BEB), Engineer Mobility Augmentation Companies (MAC), and Combat Engineer Companies - Armored (CEC-A). The production / acquisition strategy includes a partnership with Anniston Army Depot (ANAD) for the production of the Abrams chassis. Production Qualification Test (PQT) was completed February 2019 and Initial Operational Test (IOT) was completed November 2020. The Full Rate Production (FRP) approval decision was granted in March 2021.

Joint Assault Bridge (JAB) Army Acquisition Objective (AAO): 297

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	10	-	10	-	10	-	-	-	-
	Total Obligation Authority	47.226	-	50.405	-	50.405	-	-	-	-
ANG	Quantity	21	-	7	-	7	-	-	-	-
	Total Obligation Authority	99.174	-	32.142	-	32.142	-	-	-	-
AR	Quantity	1	-	6	-	6	-	-	-	-
	Total Obligation Authority	4.723	-	28.226	-	28.226	-	-	-	-
Total:	Quantity	32	-	23	-	23	-	-	-	-
Secondary Distribution	Total Obligation Authority	151.123	-	110.773	-	110.773	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:** 5225GZ3001 / Joint Assault Bridge

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0604804A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: X33

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	GZ3001 / Joint Assault Bridge	P-5a, P-21	B		75 / 404.858	32 / 151.123	- / -	23 / 110.773	- / -	23 / 110.773
P-40	Total Gross/Weapon System Cost				75 / 404.858	32 / 151.123	- / -	23 / 110.773	- / -	23 / 110.773

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY 2022 funding total includes \$88.185 million for Base, \$0 for Direct War, and \$22.588 for Enduring Costs in the Base Budget.
 FY 2022 Base Procurement dollars in the amount of \$88.185 million supports 18 Joint Assault Bridges (JABs) for Army requirements.
 FY 2022 Base Procurement dollars in the amount of \$22.588 million supports 5 Joint Assault Bridges (JABs) for the European Deterrence Initiative (EDI).
 Funding supports the organic industrial base with work to be performed at Anniston Army Depot (ANAD), including purchase of long lead material and subsequent production effort.
 The Joint Assault Bridge (JAB) fills a critical need in the Armored Brigade Combat Team (ABCT) formations and provides a system that offers the Combatant Commander improved readiness and enhanced survivability, mobility, and sustainability compared to the legacy M48A5/M60 Armored Vehicle Launched Bridge (AVLB).
 In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.
 Army Acquisition Objective (AAO): 297

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Exhibit P-5, Cost Analysis: PB 2022 Army					Date: May 2021				
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20			P-1 Line Item Number / Title: 5225GZ3001 / Joint Assault Bridge				Item Number / Title [DODIC]: GZ3001 / Joint Assault Bridge		
ID Code (A=Service Ready, B=Not Service Ready) : B					MDAP/MAIS Code:				
Resource Summary			Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	
Procurement Quantity (Units in Each)			75	32	-	23	-	23	
Gross/Weapon System Cost (\$ in Millions)			404.858	151.123	-	110.773	-	110.773	
Less PY Advance Procurement (\$ in Millions)			-	-	-	-	-	-	
Net Procurement (P-1) (\$ in Millions)			404.858	151.123	-	110.773	-	110.773	
Plus CY Advance Procurement (\$ in Millions)			-	-	-	-	-	-	
Total Obligation Authority (\$ in Millions)			404.858	151.123	-	110.773	-	110.773	
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>									
Initial Spares (\$ in Millions)			-	-	-	-	-	-	
Gross/Weapon System Unit Cost (\$ in Thousands)			5,398.107	4,722.594	-	4,816.217	-	4,816.217	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
Hardware - LRIP ^(†)	1,412.480	75	105.936	1,494.750	4	5.979	-	-	-	-	-	-	-	-	-	-	-	-
Hardware - FRP ^(†)	-	-	-	1,125.107	28	31.503	-	-	-	1,186.000	23	27.278	-	-	-	1,186.000	23	27.278
GFM ANAD Rolling Chassis	2,515.093	75	188.632	2,529.000	32	80.928	-	-	-	2,668.522	23	61.376	-	-	-	2,668.522	23	61.376
Bridge Upgrades	465.520	75	34.914	487.813	32	15.610	-	-	-	498.913	23	11.475	-	-	-	498.913	23	11.475
Engineering Changes	-	-	18.675	-	-	6.000	-	-	-	-	-	4.000	-	-	-	-	-	4.000
System Engineering/ Program Management	-	-	30.238	-	-	4.921	-	-	-	-	-	4.163	-	-	-	-	-	4.163
Support Equipment/ ASIOE	-	-	7.542	-	-	0.450	-	-	-	-	-	0.181	-	-	-	-	-	0.181
Fielding	-	-	4.788	-	-	1.050	-	-	-	-	-	1.380	-	-	-	-	-	1.380
First Destination Transportation - FDT	-	-	1.051	-	-	1.150	-	-	-	-	-	0.920	-	-	-	-	-	0.920
Subtotal: Recurring Cost	-	-	391.776	-	-	147.591	-	-	-	-	-	110.773	-	-	-	-	-	110.773
Non Recurring Cost																		
Logistics Products	-	-	5.100	-	-	1.032	-	-	-	-	-	-	-	-	-	-	-	-
Simulator - Common Driver Trainer (CDT) Update	-	-	7.982	-	-	2.500	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Non Recurring Cost	-	-	13.082	-	-	3.532	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Flyaway Cost	-	-	404.858	-	-	151.123	-	-	-	-	-	110.773	-	-	-	-	-	110.773

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Exhibit P-5, Cost Analysis: PB 2022 Army													Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20						P-1 Line Item Number / Title: 5225GZ3001 / Joint Assault Bridge						Item Number / Title [DODIC]: GZ3001 / Joint Assault Bridge						
ID Code (A=Service Ready, B=Not Service Ready) : B									MDAP/MAIS Code:									

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Gross/Weapon System Cost	5,398.107	75	404.858	4,722.594	32	151.123	-	-	-	4,816.217	23	110.773	-	-	-	4,816.217	23	110.773

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity		10	-	10	-
	Total Obligation Authority		47.226	-	50.405	-
ANG	Quantity		21	-	7	-
	Total Obligation Authority		99.174	-	32.142	-
AR	Quantity		1	-	6	-
	Total Obligation Authority		4.723	-	28.226	-
Total:	Quantity		32	-	23	-
Secondary Distribution	Total Obligation Authority		151.123	-	110.773	-

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 5225GZ3001 / Joint Assault Bridge	Item Number / Title [DODIC]: GZ3001 / Joint Assault Bridge
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Hardware - LRIP		2020	DRS Sustainment Systems, INC / Saint Louis, MO	C / FFP	TACOM, Warren, MI	Mar 2021	Jun 2022	4	1,494.750	Y		
Hardware - FRP ^(†)		2020	DRS Sustainment Systems, INC / Saint Louis, MO	C / FFP	TACOM, Warren, MI	Apr 2021	Jun 2022	28	1,125.107	Y		
Hardware - FRP ^(†)		2022	DRS Sustainment Systems, INC / Saint Louis, MO	C / FFP	TACOM, Warren, MI	Mar 2022	Apr 2023	23	1,186.000	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20 **P-1 Line Item Number / Title:** 5225GZ3001 / Joint Assault Bridge **Item Number / Title [DODIC]:** GZ3001 / Joint Assault Bridge

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2023												Fiscal Year 2024												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEP T O 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023												Calendar Year 2024												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
Hardware - FRP																															
	1	2020	ARMY	28	8	20	3	3	3	3	3	3	2																0		
	1	2022	ARMY	23	0	23	-	-	-	-	-	-	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2022 Army	Date: May 2021
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Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 5225GZ3001 / Joint Assault Bridge	Item Number / Title [DODIC]: GZ3001 / Joint Assault Bridge
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MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2022	1-8-5 For 2022	MAX For 2022	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	DRS Sustainment Systems, INC - Saint Louis, MO	1	2	5	0	2	16	18	0	2	16	18

"A" in the Delivery Schedule indicates the Contract Award Date.
Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:** 6406GA0700 / M1 Abrams Tank (MOD)

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	7,918.097	325.292	375.107	-	-	-	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	7,918.097	325.292	375.107	-	-	-	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	7,918.097	325.292	375.107	-	-	-	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Abrams tank fleet modification program applies Materiel Developer and Combat Developer approved modifications to the fielded Abrams family of vehicles either through field modifications at the unit or through application during vehicle recapitalization. Common Abrams modifications include: Active Protection Systems (APS), gun tube durability improvements, Blue Force Tracking, Mounted Family of Computer System (MFOCs) and Power Train Improvement & Integration Optimization Program (i.e. Total Integrated Engine Revitalization (TIGER) and Transmission Modifications) which provide more reliability, durability, and a single standard for the vehicle's power train. Survivability improvements include frontal and side armor upgrades. Key safety improvements include the loaders tray modification, ammunition rack upgrades, Rear View Sensing System (RVSS), light weighting, and any other modification identified in existing requirement documents or validated by the Army.

This program also supports the Army's Abrams Tank Industrial Base (IB) strategy, which focuses on mitigating impacts to the Abrams Tank Industrial Base by maintaining, optimizing, and modernizing the manufacturing facilities comprising the Abrams Tank Industrial Base.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	325.292	375.107	-	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	325.292	375.107	-	-	-	-	-	-	-

Justification:

There is no FY 2022 budget request for this funding line.

Abrams Modification (Mod) efforts and funds in 6500GA0700, are realigned to Abrams Upgrade, 6500GA0750, starting in FY 2022.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles		P-1 Line Item Number / Title: 6406GA0700 / M1 Abrams Tank (MOD)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
In accordance with Section 1815 of the FY2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.		

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity:
 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:**
 6500GA0750 / Abrams Upgrade Program

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0203735A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	1,586	171	102	70	-	70	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	11,938.810	1,746.007	968.094	981.337	-	981.337	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	2,064.494	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	9,874.316	1,746.007	968.094	981.337	-	981.337	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	2,064.494	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	11,938.810	1,746.007	968.094	981.337	-	981.337	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	7,527.623	10,210.567	9,491.118	14,019.100	-	14,019.100	-	-	-	-	-	-

Description:

Note: Abrams Modification (Mod) efforts and funds in 6406GA0700, are realigned to Abrams Upgrade, 6500GA0750. Abrams Modification Government Owned - Government Operated (GOGO) and Government Owned - Contractor Operated (GOCO) efforts are realigned to Production Base Support 3270GC0050. These realignments will begin in FY2022 to allow for greater program transparency, responsiveness, and flexibility.

The Abrams Tank Program enables combat supremacy by upgrading existing tank variants to the M1A2 System Enhancement Program version 3 (SEPV3) configuration, modifying the fielded tank fleet and managing the industrial base (IB) recurring cost of daily operations and support of the production plants. This program focuses on planning, preparing, and executing all efforts required to produce the current and future Abrams tanks. The Abrams Program provides total package fielding and associated training devices to support fleet upgrades and modifications.

The Abrams Tank Production Program upgrades existing Abrams tank variants to the M1A2 SEPV3 tank configuration in order to enhance tank survivability, lethality, and mobility while improving overall system reliability and durability. The M1A2 SEPV3 incorporates turret and hull armor upgrades, mine blast improvements, reactive armor tiles, lightweight belly armor, improved countermine equipment, Improvised Explosive Device (IED) jamming equipment, a Total Integrated Engine Revitalization (TIGER) engine, an upgraded transmission, an Auxiliary Power Unit (APU), improved power generation & distribution, Ammunition Data Link (ADL) for smart munitions, Embedded Training, Blue Force Tracker, Block 1 Second Generation Forward Looking Infra-Red (FLIR) technology, and improved computer systems with Line Replaceable Modules (LRMs) to include microprocessors, high-definition color flat panel displays, increased memory capacity, Gigabit Ethernet, and a new operating system designed to run the Common Operating Environment (COE) software. The Abrams Tank Production Program funds the costs required for the daily operation of the production plants producing M1A2 SEPV3 tanks and components.

The Abrams Tank Fleet Modification Program applies Materiel Developer and Combat Developer approved modifications to the fielded Abrams family of vehicles either through field modifications at the unit or through application during vehicle recapitalization. Common Abrams modifications include Active Protection Systems (APS), lethality enhancements to fire the latest smart munitions, gun tube durability improvements, vehicle smoke, Network upgrades, GPS enhancements, cyber security measures, Power Train Improvements, safety improvements, light weighting, and any other modification identified in existing requirement documents or validated by the Army. Funding is also used for recurring improvements for Industrial Base facilities and their components by focusing on planning, maintaining, improving, optimizing, and modernizing contractor's manufacturing facilities.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army Quantity	171	13	-	-	-	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles
P-1 Line Item Number / Title: 6500GA0750 / Abrams Upgrade Program

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0203735A

Line Item MDAP/MAIS Code: N/A

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
	Total Obligation Authority	1,746.007	123.385	-	-	-	-	-	-	-
ANG	Quantity	-	89	70	-	70	-	-	-	-
	Total Obligation Authority	-	844.709	981.337	-	981.337	-	-	-	-
Total:	Quantity	171	102	70	-	70	-	-	-	-
Secondary Distribution	Total Obligation Authority	1,746.007	968.094	981.337	-	981.337	-	-	-	-

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity:
 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles **P-1 Line Item Number / Title:**
 6500GA0750 / Abrams Upgrade Program

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** 0203735A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	GA0750 / Abrams Upgrade Program	P-5a, P-21	A		1,586 / 11,938.810	171 / 1,746.007	102 / 968.094	70 / 981.337	- / -	70 / 981.337
P-40	Total Gross/Weapon System Cost				1,586 / 11,938.810	171 / 1,746.007	102 / 968.094	70 / 981.337	- / -	70 / 981.337

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 Note: Abrams Modification (Mod) efforts and funds in 6406GA0700, are realigned to Abrams Upgrade, 6500GA0750. Abrams Modification Government Owned - Government Operated (GOGO) and Government Owned - Contractor Operated (GOCO) efforts are realigned to Production Base Support 3270GC0050. These realignments will begin in FY2022 to allow for greater program transparency, responsiveness, and flexibility.

FY 2022 funding total includes \$981.337 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Base Procurement dollars in the amount of \$981.337 million supports the following:

The upgrade and assembly of 70 Abrams tank variants to the M1A2 System Enhancement Program (SEP) V3 configuration. This upgrade enhances tank survivability, the automotive power pack, computer systems and night vision capabilities. The M1A2 System Enhancement Program (SEP) V3 also incorporates turret and hull armor upgrades for enhanced crew survivability. This upgrade is part of the Engineering Change Proposal (ECP) that addresses capability gaps in the tank fleet. The program upgrades will begin at Anniston Army Depot (ANAD) where Vehicle and Component Refurbishment will occur, and finish by General Dynamics Land Systems (GDLS) at the Joint Systems Manufacturing Center (JSMC) in Lima, OH. It also includes the procurement of Government Furnished Equipment, Common Remote Operated Weapon Station Low Profile (CROWS-LP), Armor, Digital Electronic Control Units (DECU), Gun Tubes, Mine Plows and Rollers, and Transmissions. The program funds the recurring costs required for the daily operation and support of the production plants to include utilities and energy payments, security, inspections, and emergency minor repairs.

Field Modifications: Funding supports the procurement and field application of the following efforts: Ammunition Data Link (ADL) to fire programmable ammunition; continued support of the Total Integrated Engine Revitalization (TIGER) and Transmission programs; Direct Support Electrical System Test Sets (DSESTS); upgrades to Training Aids, Devices, Simulators and Simulations (TADSS); logistics support to facilitate the installation of the improved Active Protection System, which is critical to counter anti-armor capabilities in near-peer adversaries; Vehicle Engine Exhaust Smoke System (VEESS); and Manual Traverse Mechanism (MTM). Funding also supports the management of Facilities maintenance, and operation of industrial base real property; replacement, rehabilitation, and upgrade of the facilities; Quality Work-life Environment (QWE) revitalization; preservation, installation, use, maintenance repair, protection and surveillance, and accountability of these facilities. These services are critical for continued planning, production and upgrade of the existing Abrams fleet to its newest configurations.

In accordance with Section 1815 of the FY2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

In FY2022, funding in the amount of \$1.826 million for manpower was realigned to Operations and Maintenance. Program support costs have been accurately updated to reflect the realignments.

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Exhibit P-5, Cost Analysis: PB 2022 Army					Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20			P-1 Line Item Number / Title: 6500GA0750 / Abrams Upgrade Program			Item Number / Title [DODIC]: GA0750 / Abrams Upgrade Program				
ID Code (A=Service Ready, B=Not Service Ready) : A					MDAP/MAIS Code:					
Resource Summary			Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total		
Procurement Quantity (Units in Each)			1,586	171	102	70	-	70		
Gross/Weapon System Cost (\$ in Millions)			11,938.810	1,746.007	968.094	981.337	-	981.337		
Less PY Advance Procurement (\$ in Millions)			2,064.494	-	-	-	-	-		
Net Procurement (P-1) (\$ in Millions)			9,874.316	1,746.007	968.094	981.337	-	981.337		
Plus CY Advance Procurement (\$ in Millions)			2,064.494	-	-	-	-	-		
Total Obligation Authority (\$ in Millions)			11,938.810	1,746.007	968.094	981.337	-	981.337		
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>										
Initial Spares (\$ in Millions)			-	-	-	-	-	-		
Gross/Weapon System Unit Cost (\$ in Thousands)			7,527.623	10,210.567	9,491.118	14,019.100	-	14,019.100		

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
Basic Vehicle ⁽¹⁾	3,982.893	1,931	7,690.967	4,742.608	171	810.986	4,232.431	102	431.708	4,544.800	70	318.136	-	-	-	4,544.800	70	318.136
Government Furnished Equipment (GFE)	-	-	1,901.241	-	-	417.433	-	-	203.602	-	-	-	-	-	-	-	-	-
Upgrade Government Furnished Equipment (GFE)	-	-	-	-	-	-	-	-	-	-	-	218.080	-	-	-	-	-	218.080
Pre-Modification Vehicle Teardown/ Refurb	-	-	299.388	-	-	227.913	-	-	154.783	-	-	-	-	-	-	-	-	-
Upgrade Vehicle and Component Refurbishment	-	-	-	-	-	-	-	-	-	-	-	93.912	-	-	-	-	-	93.912
TPF/New Equipment Training	-	-	244.263	-	-	43.422	-	-	41.428	-	-	-	-	-	-	-	-	-
Total Package Fielding (TPF)	-	-	-	-	-	-	-	-	-	-	-	30.740	-	-	-	-	-	30.740
Field Modifications	-	-	-	-	-	-	-	-	-	-	-	283.840	-	-	-	-	-	283.840
Government Support	-	-	1,169.627	-	-	32.688	-	-	31.015	-	-	-	-	-	-	-	-	-
Government Program Support	-	-	-	-	-	-	-	-	-	-	-	36.629	-	-	-	-	-	36.629
Transmissions	-	-	216.551	-	-	41.793	-	-	30.000	-	-	-	-	-	-	-	-	-
Forward Looking Infrared (FLIR)	-	-	309.943	-	-	128.759	-	-	38.146	-	-	-	-	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2022 Army												Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20						P-1 Line Item Number / Title: 6500GA0750 / Abrams Upgrade Program						Item Number / Title [DODIC]: GA0750 / Abrams Upgrade Program					
ID Code (A=Service Ready, B=Not Service Ready) : A												MDAP/MAIS Code:					

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Industrial Base Mitigation Support/ Facilities Optimization and Maintenance	-	-	105.038	-	-	43.013	-	-	37.412	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	-	-	11,937.018	-	-	1,746.007	-	-	968.094	-	-	981.337	-	-	-	-	-	981.337
Non Recurring Cost																		
FY 2019 NDAA SEC 825 MDAP Cost Overrun	-	-	1.793	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	1.793	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Flyaway Cost</i>	-	-	11,938.811	-	-	1,746.007	-	-	968.094	-	-	981.337	-	-	-	-	-	981.337
Gross/Weapon System Cost	7,527.623	1,586	11,938.810	10,210.567	171	1,746.007	9,491.118	102	968.094	14,019.100	70	981.337	-	-	-	14,019.100	70	981.337

Remarks:

Based on the execution of the program FY 2020 Quantities should be 186. Quantities will be updated to adjust for actual execution data prior to the submission of the FY 2023 President's Budget.

FY 2020 unit cost = Based on inducting M1A1 tanks with significant rework/replacement of engines and gun tubes due to tank age. Tank quantity = 186 (107 Active Army, 79 National Guard)

FY 2021 unit cost = Lower costs are due to inducting M1A2 SEPv2 tanks per the Army's direction. Tank Quantity = 102 National Guard

FY 2022 unit cost = Higher unit cost is due to inclusion of the mod line funding, from 6406GA0700, in the calculation. Actual tank production cost are in line with FY2021 due to continuing to induct M1A2 SEPv2 tanks per the Army's direction.

Abrams calculation for unit cost is the sum of Upgrade Vehicle Production, Upgrade Government Furnished Equipment (GFE), Upgrade Vehicle and Component Refurbishment, and Upgrade Total Package Fielding (TPF) divided by vehicle quantity.

*Note: Beginning in FY 2022 the Transmissions and Forward Looking Infra-Red (FLIR) technology costs are rolled into the Government Furnished Equipment (GFE) line.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	171	13	-	-	-
	Total Obligation Authority	1,746.007	123.385	-	-	-
ANG	Quantity	-	89	70	-	70
	Total Obligation Authority	-	844.709	981.337	-	981.337
Total:	Quantity	171	102	70	-	70

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Exhibit P-5, Cost Analysis: PB 2022 Army			Date: May 2021			
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20		P-1 Line Item Number / Title: 6500GA0750 / Abrams Upgrade Program		Item Number / Title [DODIC]: GA0750 / Abrams Upgrade Program		
ID Code (A=Service Ready, B=Not Service Ready) : A			MDAP/MAIS Code:			
Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Secondary Distribution	Total Obligation Authority	1,746.007	968.094	981.337	-	981.337

(t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army	Date: May 2021
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Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 6500GA0750 / Abrams Upgrade Program	Item Number / Title [DODIC]: GA0750 / Abrams Upgrade Program
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Basic Vehicle ^(†)		2020	GDLS / Sterling Heights, MI	SS / FPIF	TACOM-Warren	Mar 2020	Sep 2021	171	4,742.608	N		
Basic Vehicle ^(†)		2021	GDLS / Sterling Heights, MI	SS / FPIF	TACOM-Warren	Mar 2021	Sep 2022	102	4,232.431	N		
Basic Vehicle ^(†)		2022	GDLS / Sterling Heights, MI	SS / FPIF	TACOM-Warren	Mar 2022	Sep 2023	70	4,544.800	N		

^(†) indicates the presence of a P-21

Remarks:

GDLS-Prime Contractor, Sterling Heights, MI
 Manufactured at the Joint Systems Manufacturing Center (JSMC), Lima, OH

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Exhibit P-21, Production Schedule: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20 **P-1 Line Item Number / Title:** 6500GA0750 / Abrams Upgrade Program **Item Number / Title [DODIC]:** GA0750 / Abrams Upgrade Program

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2020												Fiscal Year 2021												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2019	BAL DUE AS OF 1 OCT	Calendar Year 2020												Calendar Year 2021												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
Basic Vehicle																															
Prior Years Deliveries: 1931																															
1		2020	ARMY	171	0	171																							15	156	
1		2021	ARMY	102	0	102																								102	
1		2022	ARMY	70	0	70																								70	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20 **P-1 Line Item Number / Title:** 6500GA0750 / Abrams Upgrade Program **Item Number / Title [DODIC]:** GA0750 / Abrams Upgrade Program

Cost Elements <i>(Units in Each)</i>					Fiscal Year 2022													Fiscal Year 2023													BALANCE		
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 2 1	BAL D U E A S O F 1 O C T	Calendar Year 2022													Calendar Year 2023													
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			
Basic Vehicle																																	
Prior Years Deliveries: 1931																																	
1		2020	ARMY	171	15	156	15	15	15	15	15	15	14	13	13	13														0			
1		2021	ARMY	102	0	102	-	-	-	-	-	-	-	-	-	-	8	9	9	9	9	9	9	8	8	8	8	8	0				
1		2022	ARMY	70	0	70							A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	64				
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P			

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Exhibit P-21, Production Schedule: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20 **P-1 Line Item Number / Title:** 6500GA0750 / Abrams Upgrade Program **Item Number / Title [DODIC]:** GA0750 / Abrams Upgrade Program

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2024												Fiscal Year 2025												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	Calendar Year 2024												Calendar Year 2025												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
Basic Vehicle																															
Prior Years Deliveries: 1931																															
	1	2020	ARMY	171	171	0																						0			
	1	2021	ARMY	102	102	0																						0			
	1	2022	ARMY	70	6	64	6	6	5	6	6	6	6	6	6	5	6											0			
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2022 Army								Date: May 2021				
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20				P-1 Line Item Number / Title: 6500GA0750 / Abrams Upgrade Program				Item Number / Title [DODIC]: GA0750 / Abrams Upgrade Program				
MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2022	1-8-5 For 2022	MAX For 2022	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	GDLS - Sterling Heights, MI	1	12	35	0	14	18	32	0	5	18	23

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity:
 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles

P-1 Line Item Number / Title:
 6652GM1900 / VEHICLE PROTECTION SYSTEMS (VPS)

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	-	80.286	-	80.286	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	-	80.286	-	80.286	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	-	80.286	-	80.286	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Vehicle Protection Suite (VPS) Project (FE8) will evaluate, mature, and integrate onto multiple combat platforms, combinations of active, reactive, and passive survivability capabilities. These capabilities will leverage both Horizontal Technology Integration (HTI) principles and the Army's Modular Active Protection Controller and Framework to develop tailored vehicle survivability sets that will mitigate existing protection gaps, allow for future technology insertion to meet evolving threats, and minimize the impact to the current capabilities hosted on Army ground system platforms.

(AD1911) - VPS Base Kit with Laser Warning Receiver

The VPS Base Kit with Laser Warning Receiver (LWR) Program was designated as a Program of Record in August 2018. The LWR will detect enemy military laser aided threats and provide rapid warning of threat type and signal direction to the Modular Active Protection Controller (MAC) via the Modular Active Protection Framework (MAF) LWR. It will be able to detect the broad array of laser aided threats that ground combat vehicles will face in a near peer environment (Laser Range Finders (LRF), Laser Target Designators (LTD), and Laser Beam Rider ATGMs (LBR)). The system will alert the crew to which of the three categories of threats are targeting the system and allow for the crew to respond based on that threat. Threat timelines are critical to the response of the vehicle crew and the ability to counter the threat. The LWR will provide early warning to laser aided threat elements. The VPS Base Kit with LWR is currently planned to be implemented as an Engineering Change Proposal to multiple ground combat vehicle platforms.

(AD1912) - Signature Management

The Signature Management (SIGMAN) paint program was designated as a program of record in August 2018. Signature Management reduces the infrared signature of ground combat vehicles. This capability will reduce the probability of enemy detection from classified ranges and wave bands. Signature Management is designed to be integrated with no changes to the combat vehicles' baseline paint. This program is intended to be used on all combat vehicles, with future expansion to other U.S. Army vehicle systems. Signature Management is the Vehicle Protection System baseline layer for the signature management architecture. Future Vehicle Protection technologies may be layered in coordination with this program.

Combat vehicles face numerous detection systems that operate in the infrared wavelengths. These detection systems can be vehicle mounted, carried by individuals or satellite mounted. The Signature Management - Paint program focuses on vehicle mounted detection systems that operate in specific wavelengths. Future capability may be added to the Signature Management program to address other wavelength gaps, or managed through other future camouflage and concealment programs. The Signature Management program is currently planned to be implemented as a production cut-in and/or retrofit to the enduring fleet onto multiple ground combat vehicle platforms.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2022 Army							Date: May 2021			
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles					P-1 Line Item Number / Title: 6652GM1900 / VEHICLE PROTECTION SYSTEMS (VPS)					
ID Code (A=Service Ready, B=Not Service Ready):			Program Elements for Code B Items: N/A			Other Related Program Elements: N/A				
Line Item MDAP/MAIS Code: N/A										

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	-	80.286	-	80.286	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	-	80.286	-	80.286	-	-	-	-

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 01: Tracked Combat Vehicles / BSA 20: Modification of Tracked Combat Vehicles		P-1 Line Item Number / Title: 6652GM1900 / VEHICLE PROTECTION SYSTEMS (VPS)
ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	GM1911 / VPS MODULAR ACTIVE PROTECTION SYSTEMS W/ LASER				- / -	- / -	- / -	- / 73.379	- / -	- / 73.379
P-5	GM1912 / VPS SIGNATURE MANAGEMENT				- / -	- / -	- / -	- / 6.907	- / -	- / 6.907
P-40	Total Gross/Weapon System Cost				- / -	- / -	- / -	- / 80.286	- / -	- / 80.286

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

FY 2022 funding total includes \$80.286 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Total Base dollars in the amount of \$80.286 million supports procurement VPS Base Kits (VBK) with Laser Warning Receiver (LWR) for the Bradley A4 platform and Thermally Adjustable Low Observable Network (TALON) Chemical Agent Resistant Coating (CARC) System paint to support 294 vehicles across multiple ground combat platforms.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), these items are necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

VEHICLE PROTECTION SYSTEMS (VPS) is a new start in FY 2022.

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 6652GM1900 / VEHICLE PROTECTION SYSTEMS (VPS)	Item Number / Title [DODIC]: GM1911 / VPS MODULAR ACTIVE PROTECTION SYSTEMS W/LASER

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	-	-	-	73.379	-	73.379
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	-	73.379	-	73.379
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	-	73.379	-	73.379

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
Manufacturing - LWR Bradley	-	-	-	-	-	-	-	-	-	473.667	138	65.366	-	-	-	473.667	138	65.366
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	65.366	-	-	-	-	-	65.366
Non Recurring Cost																		
Initial Spares	-	-	-	-	-	-	-	-	-	467.471	17	7.947	-	-	-	467.471	17	7.947
<i>Subtotal: Non Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	7.947	-	-	-	-	-	7.947
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	-	-	-	73.313	-	-	-	-	-	73.313
Support - Support Equipment Cost																		
Maintenance Equipment	-	-	-	-	-	-	-	-	-	-	-	0.066	-	-	-	-	-	0.066
<i>Subtotal: Support - Support Equipment Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.066	-	-	-	-	-	0.066
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	-	-	73.379	-	-	-	-	-	73.379

Remarks:

P-21 is not required, as all hardware items procured are Commercial Off the Shelf (COTS) or Commercial Off the Shelf/Non-Developmental Items (COTS/NDI).

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 6652GM1900 / VEHICLE PROTECTION SYSTEMS (VPS)	Item Number / Title [DODIC]: GM1911 / VPS MODULAR ACTIVE PROTECTION SYSTEMS W/LASER

ID Code (A=Service Ready, B=Not Service Ready) : _____ **MDAP/MAIS Code:** _____

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	-	-	73.379	-	73.379
Total: Secondary Distribution	Quantity	-	-	-	-	-
	Total Obligation Authority	-	-	73.379	-	73.379

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 6652GM1900 / VEHICLE PROTECTION SYSTEMS (VPS)	Item Number / Title [DODIC]: GM1912 / VPS SIGNATURE MANAGEMENT

ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	-	-	-	6.907	-	6.907
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	-	-	-	6.907	-	6.907
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	-	-	-	6.907	-	6.907

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
Production Manufacturing	-	-	-	-	-	-	-	-	-	21.816	294	6.414	-	-	-	21.816	294	6.414
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	6.414	-	-	-	-	-	6.414
Non Recurring Cost																		
Initial Spares	-	-	-	-	-	-	-	-	-	-	-	0.221	-	-	-	-	-	0.221
<i>Subtotal: Non Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.221	-	-	-	-	-	0.221
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	-	-	-	6.635	-	-	-	-	-	6.635
Support - Support Equipment Cost																		
Maintenance Equipment	-	-	-	-	-	-	-	-	-	-	-	0.272	-	-	-	-	-	0.272
<i>Subtotal: Support - Support Equipment Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.272	-	-	-	-	-	0.272
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	-	-	6.907	-	-	-	-	-	6.907

Remarks:
P-21 is not required, as all hardware items procured are Commercial Off the Shelf (COTS) or Commercial Off the Shelf/Non-Developmental Items (COTS/NDI).

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 01 / 20	P-1 Line Item Number / Title: 6652GM1900 / VEHICLE PROTECTION SYSTEMS (VPS)	Item Number / Title [DODIC]: GM1912 / VPS SIGNATURE MANAGEMENT

ID Code (A=Service Ready, B=Not Service Ready) : _____ **MDAP/MAIS Code:** _____

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	-	-	6.907	-	6.907
Total: Secondary Distribution	Quantity	-	-	-	-	-
	Total Obligation Authority	-	-	6.907	-	6.907

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles	P-1 Line Item Number / Title: 2472G13000 / M240 Medium Machine Gun (7.62mm)
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0604601A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	2,531	1,115	864	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	805.939	12.500	12.500	-	-	-	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	805.939	12.500	12.500	-	-	-	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	805.939	12.500	12.500	-	-	-	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	318.427	11.211	14.468	-	-	-	-	-	-	-	-	-

Description:

The M240 Medium Machine Gun (7.62mm) program supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). The M240 series machine guns are available in different configurations for various applications. The M240B Machine Gun is a ground version of the original M240 Machine Gun, 7.62MM Medium Machine Gun class weapon, designed as a coaxial/pintle-mounted weapon for tanks and light armored vehicles. The M240B also includes: a flash suppressor, front sight, carrying handle, buttstock, pistol grip, bipod, heat shield and rear sight assembly. The M240B Machine Gun may also be tripod-mounted and used in conjunction with a traversing and elevating mechanism and mount pintle. The M240H is a variant of this same family of Machine Guns and is employed as the self defensive armament subsystem for the UH-60 BLACK HAWK and CH-47 Chinook Helicopters. The M240H uses the same receiver and barrel as the M240B but has a spade grip trigger assembly. It also has a unique mounting interface and pintle to properly interface with the helicopter platform. The lighter M240L replaces the M240B in Special Forces/Rangers, Light Infantry and Airborne units. The M240L significantly reduces the weight of the current M240B, by approximately 6 pounds, while maintaining the same level of reliability. The weight reduction is accomplished through the use of lightweight materials and innovative manufacturing techniques.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	1,115	864	-	-	-	-	-	-
	Total Obligation Authority	12.500	12.500	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	1,115	864	-	-	-	-	-	-
	Total Obligation Authority	12.500	12.500	-	-	-	-	-	-

Justification:

There is no FY 2022 budget request for this funding line.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L.110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles		P-1 Line Item Number / Title: 2472G13000 / M240 Medium Machine Gun (7.62mm)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0604601A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles	P-1 Line Item Number / Title: 3736G13101 / MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604601A
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Line Item MDAP/MAIS Code: 1D0

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	665	254	274	372	-	372	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	46.324	19.264	22.629	31.623	-	31.623	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	46.324	19.264	22.629	31.623	-	31.623	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	46.324	19.264	22.629	31.623	-	31.623	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	69.660	75.843	82.588	85.008	-	85.008	-	-	-	-	-	-

Description:

This program supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Soldier Lethality in contested environments. The Multi-Role Anti-Armor/Anti-Personnel Weapon System (MAAWS) or, M3/M3E1 Carl Gustaf MAAWS is a man-portable shoulder-fired, 84mm reusable recoilless rifle/launcher weapon system with an effective firing range of up to 1300 meters based on ammunition used. It can be fired by one man from the standing, kneeling, sitting or prone positions and supports full and sub caliber training systems. The M3/M3E1 MAAWS is capable of engaging, neutralizing and destroying lightly armored vehicles, soft skinned vehicles, personnel in the open or defilade, and field fortifications in both open urban and rural operational environments. The M3/M3E1 MAAWS is also capable of marking threat targets with smoke for supporting weapons, obscuring threat weapons and illuminating threat targets.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	140	181	346	-	346	-	-	-
	Total Obligation Authority	18.868	14.866	29.413	-	29.413	-	-	-
ANG	Quantity	114	93	26	-	26	-	-	-
	Total Obligation Authority	0.396	7.763	2.210	-	2.210	-	-	-
Total:	Quantity	254	274	372	-	372	-	-	-
Secondary Distribution	Total Obligation Authority	19.264	22.629	31.623	-	31.623	-	-	-

UNCLASSIFIED

Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles	P-1 Line Item Number / Title: 3736G13101 / MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604601A
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Line Item MDAP/MAIS Code: 1D0

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	G13101 / MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM	P-5a	A		665 / 46.324	254 / 19.264	274 / 22.629	372 / 31.623	- / -	372 / 31.623
P-40	Total Gross/Weapon System Cost				665 / 46.324	254 / 19.264	274 / 22.629	372 / 31.623	- / -	372 / 31.623

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY 2022 funding total includes \$24.352 million for Base, \$7.271 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Base procurement dollars in the amount of \$31.623 million will support the Active Army and National Guard through the procurement of 372 M3E1 Lightweight recoilless rifle/launcher weapon systems, fire control, headsets, sub caliber adapters, and initial spares. Funds will also provide for all program support, transport and fielding of the weapon system. The M3/M3E1 is a man-portable shoulder-fired, 84mm reusable recoilless rifle/launcher weapon system capable of engaging, neutralizing and destroying lightly armored vehicles, soft skinned vehicles, personnel in the open or defilade, and field fortifications in both open urban and rural operational environments.

FY 2022 Direct War procurement dollars in the amount of \$7.271 million procures 91 current M3's and associated items of equipment.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

Army Acquisition Objective (AAO): 2,460

UNCLASSIFIED

Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10		P-1 Line Item Number / Title: 3736G13101 / MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM
		Item Number / Title [DODIC]: G13101 / MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM

ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (Units in Each)		665	254	274	372	-	372
Gross/Weapon System Cost (\$ in Millions)		46.324	19.264	22.629	31.623	-	31.623
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		46.324	19.264	22.629	31.623	-	31.623
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		46.324	19.264	22.629	31.623	-	31.623
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>							
Initial Spares (\$ in Millions)		-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)		69.660	75.843	82.588	85.008	-	85.008

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
M3A1 ^(†)	31.515	649	20.453	28.558	226	6.454	30.710	214	6.572	28.567	372	10.627	-	-	-	28.567	372	10.627
Fire Control ^(††)	28.758	649	18.664	28.690	226	6.484	34.000	214	7.276	28.632	372	10.651	-	-	-	28.632	372	10.651
Sub Caliber Adapter ^(††)	4.716	370	1.745	-	-	-	6.598	214	1.412	6.674	857	5.720	-	-	-	6.674	857	5.720
Comtac Headset w/ Push talk Assembly ^(††)	-	-	-	1.152	600	0.691	-	-	-	1.164	744	0.866	-	-	-	1.164	744	0.866
<i>Subtotal: Recurring Cost</i>	-	-	40.862	-	-	13.629	-	-	15.260	-	-	27.864	-	-	-	-	-	27.864
Non Recurring Cost																		
M3 OCO ^(††)	-	-	-	28.786	28	0.806	36.000	60	2.160	-	-	-	-	-	-	-	-	-
M3 OCO Fire Control ^(††)	-	-	-	28.679	28	0.803	34.000	60	2.040	-	-	-	-	-	-	-	-	-
M3 OCO Sub Caliber Adapter ^(†)	-	-	-	-	-	-	6.500	60	0.390	-	-	-	-	-	-	-	-	-
<i>Subtotal: Non Recurring Cost</i>	-	-	-	-	-	1.609	-	-	4.590	-	-	-	-	-	-	-	-	-
Subtotal: Hardware Cost	-	-	40.862	-	-	15.238	-	-	19.850	-	-	27.864	-	-	-	-	-	27.864
Logistics Cost																		
Recurring Cost																		
M3A1 Transport	-	-	-	-	-	0.025	-	-	0.285	-	-	0.270	-	-	-	-	-	0.270

LI 3736G13101 - MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL
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Exhibit P-5, Cost Analysis: PB 2022 Army												Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10						P-1 Line Item Number / Title: 3736G13101 / MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM						Item Number / Title [DODIC]: G13101 / MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM					
ID Code (A=Service Ready, B=Not Service Ready) : A									MDAP/MAIS Code:								

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Integrated Logistical Support-Crane	-	-	-	-	-	-	-	-	-	-	0.800	-	-	-	-	-	0.800	
FCS13 Contractor Fielding Support - Vendor	-	-	-	-	-	0.748	-	-	-	-	-	0.689	-	-	-	-	0.689	
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	0.773	-	-	0.285	-	-	1.759	-	-	-	-	1.759	
Non Recurring Cost																		
M3 OCO Transport	-	-	-	-	-	0.049	-	-	0.065	-	-	-	-	-	-	-	-	
<i>Subtotal: Non Recurring Cost</i>	-	-	-	-	-	0.049	-	-	0.065	-	-	-	-	-	-	-	-	
<i>Subtotal: Logistics Cost</i>	-	-	-	-	-	0.822	-	-	0.350	-	-	1.759	-	-	-	-	1.759	
Support - Contractor Logistics Support (CLS) Cost																		
Oversight	-	-	0.188	-	-	0.195	-	-	0.295	-	-	-	-	-	-	-	-	
<i>Subtotal: Support - Contractor Logistics Support (CLS) Cost</i>	-	-	0.188	-	-	0.195	-	-	0.295	-	-	-	-	-	-	-	-	
Support - Initial Spares and Repair Parts Cost																		
Initial Spares and Repair Parts	-	-	1.860	-	-	0.289	-	-	0.871	-	-	0.800	-	-	-	-	0.800	
<i>Subtotal: Support - Initial Spares and Repair Parts Cost</i>	-	-	1.860	-	-	0.289	-	-	0.871	-	-	0.800	-	-	-	-	0.800	
Support - New Equipment Training (NET) Cost																		
Equipment	-	-	0.390	-	-	0.453	-	-	0.518	-	-	0.700	-	-	-	-	0.700	
<i>Subtotal: Support - New Equipment Training (NET) Cost</i>	-	-	0.390	-	-	0.453	-	-	0.518	-	-	0.700	-	-	-	-	0.700	
Support - Program Management Cost																		
Government Management	-	-	3.024	-	-	2.267	-	-	0.745	-	-	0.500	-	-	-	-	0.500	
<i>Subtotal: Support - Program Management Cost</i>	-	-	3.024	-	-	2.267	-	-	0.745	-	-	0.500	-	-	-	-	0.500	
Gross/Weapon System Cost	69.660	665	46.324	75.843	254	19.264	82.588	274	22.629	85.008	372	31.623	-	-	-	85.008	372	31.623

Secondary Distribution			FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	
Army	Quantity		140		181		346		-		346	

LI 3736G13101 - MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL
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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10	P-1 Line Item Number / Title: 3736G13101 / MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM	Item Number / Title [DODIC]: G13101 / MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM

ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:				
Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
	Total Obligation Authority	18.868	14.866	29.413	-	29.413
ANG	Quantity	114	93	26	-	26
	Total Obligation Authority	0.396	7.763	2.210	-	2.210
Total:	Quantity	254	274	372	-	372
Secondary Distribution	Total Obligation Authority	19.264	22.629	31.623	-	31.623

(t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10	P-1 Line Item Number / Title: 3736G13101 / MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM	Item Number / Title [DODIC]: G13101 / MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
M3A1		2020	Saab Dynamics AB / Sweden	SS / IDIQ	ACC-NJ, Picatinny Arsenal, NJ	Dec 2019	Apr 2020	226	28.558	Y		
M3A1		2021	Saab Dynamics AB / Sweden	SS / IDIQ	ACC-NJ, Picatinny Arsenal, NJ	Nov 2020	May 2021	214	30.710	Y		
M3A1		2022	Saab Dynamics AB / Sweden	SS / IDIQ	ACC-NJ, Picatinny Arsenal, NJ	Nov 2021	May 2022	372	28.567	Y		
Fire Control		2020	Aimpoint / Sweden	MIPR	DLA Troop Support	Dec 2019	Apr 2020	226	28.690	Y		
Fire Control		2021	Aimpoint / Sweden	MIPR	DLA Troop Support	Dec 2020	Apr 2021	214	34.000	Y		
Fire Control		2022	Aimpoint / Sweden	MIPR	DLA Troop Support	Dec 2021	Apr 2022	372	28.632	Y		
Sub Caliber Adapter		2021	Saab Dynamics AB / Sweden	SS / IDIQ	Naval Surface Warfare Center, Crane, IN	Dec 2020	Apr 2021	214	6.598	Y		
Sub Caliber Adapter		2022	Saab Dynamics AB / Sweden	SS / IDIQ	Naval Surface Warfare Center, Crane, IN	Dec 2021	Apr 2022	857	6.674	Y		
Comtac Headset w/ Push talk Assembly		2022	Atlantic Signal, LLC / Topeka, Kansas	MIPR	DLA Troop Support	Dec 2021	Apr 2022	744	1.164	Y		
M3 OCO	✓	2020	Saab Dynamics AB / Sweden	SS / IDIQ	ACC-NJ, Picatinny Arsenal, NJ	Nov 2019	Mar 2020	28	28.786	Y		
M3 OCO	✓	2021	Saab Dynamics AB / Sweden	SS / IDIQ	ACC-NJ, Picatinny Arsenal, NJ	Nov 2020	May 2021	60	36.000	Y		
M3 OCO Fire Control	✓	2020	Aimpoint / Sweden	MIPR	DLA Troop Support	Dec 2019	Apr 2020	28	28.679	Y		
M3 OCO Fire Control	✓	2021	Aimpoint / Sweden	MIPR	DLA Troop Support	Dec 2020	Apr 2021	60	34.000	Y		
M3 OCO Sub Caliber Adapter	✓	2021	Saab Dynamics AB / Sweden	SS / IDIQ	Naval Surface Warfare Center, Crane, IN	Dec 2020	Apr 2021	60	6.500	Y		

Remarks:
P-21 is not required, as all hardware items procured are Commercial Off the Shelf (COTS) or Commercial Off the Shelf/Non-Developmental Items (COTS/NDI).

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles	P-1 Line Item Number / Title: 6580G02200 / Mortar Systems
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	385	371	114	78	-	78	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	434.937	33.026	20.748	37.485	-	37.485	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	434.937	33.026	20.748	37.485	-	37.485	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	434.937	33.026	20.748	37.485	-	37.485	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	1,129.706	89.019	182.000	480.577	-	480.577	-	-	-	-	-	-

Description:

Mortar Systems includes the production of 60mm Light Weight M224A1, 81mm Light Weight M252A1, and 120mm M120A1/M121 mortar weapon systems; including subsystems components M326 Mortar Stowage Kit (MSK), M1101 and M1102 trailers and associated supporting sub systems, Basic Issue Items (BI), Additional Authorized List (AAL) and tool kits. These mortar weapon systems and associated equipment and subsystem components support the mounted and dismounted vehicle platforms in the Armor Brigade Combat Teams (ABCTs), Stryker Brigade Combat Teams (SBCTs), and Infantry Brigade Combat Teams (IBCTs). The Dismounted 120mm (M120A1) system's Mortar Stowage Kit (MSK) sub systems assembly enables rapid emplacement and displacement of the M120A1 from the M1101 and M1102 Trailers or IBCT platforms. The 60mm, 81mm and 120mm mortar weapon systems and its components fulfills current and future Army Acquisition Objective (AAO) gaps, Operational Need Statement (ONS) requirements, increase of Army re-organizations and Army stand up unit requirements. The M1121 and M1120A1 system will also be mounted or integrated on the Army's current and future vehicle and trailer systems.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	371	114	78	-	78	-	-	-
	Total Obligation Authority	33.026	20.748	37.485	-	37.485	-	-	-
Total: Secondary Distribution	Quantity	371	114	78	-	78	-	-	-
	Total Obligation Authority	33.026	20.748	37.485	-	37.485	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity:
 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles **P-1 Line Item Number / Title:**
 6580G02200 / Mortar Systems

ID Code (A=Service Ready, B=Not Service Ready): A **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	G02202 / Mtr Wpn Sys	P-5a, P-21	A		385 / 434.937	371 / 33.026	114 / 20.748	78 / 37.485	- / -	78 / 37.485
P-40	Total Gross/Weapon System Cost				385 / 434.937	371 / 33.026	114 / 20.748	78 / 37.485	- / -	78 / 37.485

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

FY 2022 funding total includes \$14.663 million for Base, \$19.322 million for Direct War, and \$3.500 million for Enduring Costs in the Base Budget.

FY 2022 Base procurement dollars in the amount of \$14.663 million support the procurement of 20 each 120mm mortar weapon cannons, 30 each M121 120mm mortar weapon systems, sub systems and support equipment such as mortar weapon system kits, Modified Work Order (MWO) kits and Basic Issue Item (BII) kits, 20 each M120A1 120mm mortar weapon systems for the Armored Multipurpose Vehicle (AMPV) Mortar Carrier, Engineering Change Proposals (ECPs), Technical Data Packages (TDP), technical issues related to weapon system safety, and the procurement of mortar weapon system kits for special force requirements and modernized mounted and dismounted platforms in the Infantry Brigade Combat Teams (IBCT). Funding is essential to fill shortages of 120mm mortar weapon systems resulting from Army reorganization of IBCTs from two Battalions per Brigade to three Battalions per Brigade and increase in Army Acquisition Objective (AAO) for new stand up units.

FY 2022 Base Operation Inherent Resolve (BBIR) procurement dollars in the amount of \$19.322 million support the procurement of 179 each 120mm mortar weapon cannons to replace current fielded cannons that are experiencing an accelerated wear-out and shortened lifecycle due to extensive use in combat operations and 14 each M120A1 120mm mortar weapon systems derived from an Operational Needs Statement (ONS) requirement which are critical Army items consumed in support of deployed units' ongoing military operations including testing, fielding, staging, and transportation.

FY 2022 Base European Deterrence Initiative (BEDI) procurement dollars in the amount of \$3.500 million support the procurement of eight (8) each M120A1 120mm mortar weapon systems and six (6) each M121 120mm mortar weapon systems.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L.110-181) this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

Note: FY 2022 quantity totals 78 each full systems. FY 2022 199 each cannon tubes are a component within the 120mm mortar weapon system and are therefore not captured in the overall P-40 quantity count within this procurement package.

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10		P-1 Line Item Number / Title: 6580G02200 / Mortar Systems
		Item Number / Title [DODIC]: G02202 / Mtr Wpn Sys

ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:			
Resource Summary		Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (Units in Each)		385	371	114	78	-	78
Gross/Weapon System Cost (\$ in Millions)		434.937	33.026	20.748	37.485	-	37.485
Less PY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)		434.937	33.026	20.748	37.485	-	37.485
Plus CY Advance Procurement (\$ in Millions)		-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)		434.937	33.026	20.748	37.485	-	37.485
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>							
Initial Spares (\$ in Millions)		-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)		1,129.706	89.019	182.000	480.577	-	480.577

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
120mm Cannon Tubes ^(†)	31.242	221	6.904	40.000	85	3.400	-	-	-	60.011	199	11.942	-	-	-	60.011	199	11.942
120mm (M121) Mortar System ^(†)	-	-	-	-	-	-	124.730	18	2.245	150.000	36	5.400	-	-	-	150.000	36	5.400
120mm (M120A1) Mortar System ^(†)	-	-	-	-	-	-	-	-	-	260.000	42	10.920	-	-	-	260.000	42	10.920
120mm Mortar System ^(†)	49.044	221	10.839	53.744	85	4.568	135.077	38	5.133	-	-	-	-	-	-	-	-	-
M326 Mortar Stowage Kit ^(†)	98.664	27	2.664	103.169	49	5.055	105.000	38	3.990	-	-	-	-	-	-	-	-	-
120mm Mortar Component	16.360	221	3.616	23.598	85	2.006	-	-	-	-	-	-	-	-	-	-	-	-
Light Tactical Trailer ^(†)	-	-	-	-	-	-	10.000	38	0.380	-	-	-	-	-	-	-	-	-
81mm Mortar System ^(†)	15.986	242	3.869	17.480	84	1.468	-	-	-	-	-	-	-	-	-	-	-	-
81mm Cannon Tubes ^(†)	26.850	242	6.498	35.000	84	2.940	-	-	-	-	-	-	-	-	-	-	-	-
81mm Mortar Component	41.058	242	9.936	66.169	84	5.558	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Recurring Cost</i>	<i>-</i>	<i>-</i>	<i>44.325</i>	<i>-</i>	<i>-</i>	<i>24.995</i>	<i>-</i>	<i>-</i>	<i>11.748</i>	<i>-</i>	<i>-</i>	<i>28.262</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>28.262</i>
<i>Subtotal: Hardware Cost</i>	<i>-</i>	<i>-</i>	<i>44.325</i>	<i>-</i>	<i>-</i>	<i>24.995</i>	<i>-</i>	<i>-</i>	<i>11.748</i>	<i>-</i>	<i>-</i>	<i>28.262</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>28.262</i>

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Exhibit P-5, Cost Analysis: PB 2022 Army												Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10						P-1 Line Item Number / Title: 6580G02200 / Mortar Systems						Item Number / Title [DODIC]: G02202 / Mtr Wpn Sys					

ID Code (A=Service Ready, B=Not Service Ready) : A										MDAP/MAIS Code:							
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Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Logistics Cost																		
Recurring Cost																		
Government ILS	-	-	1.328	-	-	0.545	-	-	0.550	-	-	0.555	-	-	-	-	-	0.555
<i>Subtotal: Recurring Cost</i>	-	-	1.328	-	-	0.545	-	-	0.550	-	-	0.555	-	-	-	-	-	0.555
<i>Subtotal: Logistics Cost</i>	-	-	1.328	-	-	0.545	-	-	0.550	-	-	0.555	-	-	-	-	-	0.555
Support - Acceptance Testing Cost																		
Acceptance Test	-	-	1.725	-	-	0.750	-	-	0.799	-	-	0.824	-	-	-	-	-	0.824
First Article Test	-	-	1.595	-	-	0.701	-	-	1.046	-	-	1.077	-	-	-	-	-	1.077
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	3.320	-	-	1.451	-	-	1.845	-	-	1.901	-	-	-	-	-	1.901
Support - Fielding Cost																		
Fielding	-	-	1.623	-	-	1.000	-	-	1.100	-	-	1.133	-	-	-	-	-	1.133
<i>Subtotal: Support - Fielding Cost</i>	-	-	1.623	-	-	1.000	-	-	1.100	-	-	1.133	-	-	-	-	-	1.133
Support - Production Engineering Cost																		
Production Engineering	-	-	380.815	-	-	3.180	-	-	3.679	-	-	3.754	-	-	-	-	-	3.754
<i>Subtotal: Support - Production Engineering Cost</i>	-	-	380.815	-	-	3.180	-	-	3.679	-	-	3.754	-	-	-	-	-	3.754
Support - Staging and Transportation Cost																		
Staging and Transportation	-	-	2.201	-	-	1.354	-	-	1.125	-	-	1.159	-	-	-	-	-	1.159
<i>Subtotal: Support - Staging and Transportation Cost</i>	-	-	2.201	-	-	1.354	-	-	1.125	-	-	1.159	-	-	-	-	-	1.159
Support - Training Cost																		
Services	-	-	1.325	-	-	0.500	-	-	0.700	-	-	0.721	-	-	-	-	-	0.721
<i>Subtotal: Support - Training Cost</i>	-	-	1.325	-	-	0.500	-	-	0.700	-	-	0.721	-	-	-	-	-	0.721
Gross/Weapon System Cost	1,129.706	385	434.937	89.019	371	33.026	182.000	114	20.748	480.577	78	37.485	-	-	-	480.577	78	37.485

Remarks:

Note: FY 2022 quantity totals 78 each full systems. FY 2022 199 each cannon tubes are a component within the 120mm mortar weapon system and are therefore not captured in the quantity count within this procurement package.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	371	114	78	-	78

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Exhibit P-5, Cost Analysis: PB 2022 Army	Date: May 2021
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Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10	P-1 Line Item Number / Title: 6580G02200 / Mortar Systems	Item Number / Title [DODIC]: G02202 / Mtr Wpn Sys
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ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Secondary Distribution						
	Total Obligation Authority	33.026	20.748	37.485	-	37.485
Total:	Quantity	371	114	78	-	78
Secondary Distribution	Total Obligation Authority	33.026	20.748	37.485	-	37.485

(t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army							Date: May 2021				
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10			P-1 Line Item Number / Title: 6580G02200 / Mortar Systems				Item Number / Title [DODIC]: G02202 / Mtr Wpn Sys				

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
120mm Cannon Tubes		2020	Watervliet Arsenal / Watervliet, NY	MIPR	Picatinny Arsenal, NJ	Feb 2020	Feb 2022	85	40.000	Y		
120mm Cannon Tubes		2022	TBS01 / TBS	C / FFP	Picatinny Arsenal, NJ	Mar 2022	Mar 2024	199	60.011	Y		
120mm (M121) Mortar System ^(†)		2021	EFW Inc / Fort Worth, TX	Option / FFP	Picatinny Arsenal, NJ	Mar 2021	Jul 2023	18	124.730	Y		
120mm (M121) Mortar System ^(†)		2022	TBS01 / TBS	C / FFP	Picatinny Arsenal, NJ	Mar 2022	Jul 2024	36	150.000	Y		
120mm (M120A1) Mortar System ^(†)		2022	TBS01 / TBS	C / FFP	Picatinny Arsenal, NJ	Mar 2022	Jul 2024	42	260.000	Y		
120mm Mortar System		2020	EFW Inc / Fort Worth, TX	Option / FFP	Picatinny Arsenal, NJ	Mar 2020	Jul 2022	85	53.744	Y		
120mm Mortar System		2021	EFW Inc / Fort Worth, TX	Option / FFP	Picatinny Arsenal, NJ	Mar 2021	Jul 2023	38	135.077	Y		
M326 Mortar Stowage Kit		2020	EFW Inc / Fort Worth, TX	Option / FFP	Picatinny Arsenal, NJ	Feb 2020	Mar 2021	49	103.169	Y		
M326 Mortar Stowage Kit		2021	EFW Inc / Fort Worth, TX	Option / FFP	Picatinny Arsenal, NJ	Mar 2021	Jul 2023	38	105.000	Y		
Light Tactical Trailer	✓	2021	Sierra Army Depot / Sierra, NV	MIPR	Picatinny Arsenal, NJ	Mar 2021	Mar 2022	38	10.000	Y		
81mm Mortar System		2020	EFW Inc / Fort Worth, TX	Option / FFP	Picatinny Arsenal, NJ	Mar 2020	Jul 2022	84	17.480	Y		
81mm Cannon Tubes		2020	Watervliet Arsenal / Watervliet, NY	MIPR	Picatinny Arsenal, NJ	Feb 2020	Oct 2020	84	35.000	Y		

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10	P-1 Line Item Number / Title: 6580G02200 / Mortar Systems	Item Number / Title [DODIC]: G02202 / Mtr Wpn Sys
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Cost Elements <i>(Units in Each)</i>						Fiscal Year 2020												Fiscal Year 2021												B A L A N C E							
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEP T P R I O R T O 1 O C T 2 0 1 9	BAL D U E A S O F 1 O C T	Calendar Year 2020												Calendar Year 2021																		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P						
120mm (M121) Mortar System																																					
	1	2021	ARMY	18	0	18																							A -	-	-	-	-	-	-	-	18
	2	2022	ARMY	36	0	36																															36
120mm (M120A1) Mortar System																																					
	3	2022	ARMY	42	0	42																															42
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P							

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Exhibit P-21, Production Schedule: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10 **P-1 Line Item Number / Title:** 6580G02200 / Mortar Systems **Item Number / Title [DODIC]:** G02202 / Mtr Wpn Sys

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2022												Fiscal Year 2023												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022												Calendar Year 2023												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
120mm (M121) Mortar System																															
	1	2021	ARMY	18	0	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	0	
	2	2022	ARMY	36	0	36																								36	
120mm (M120A1) Mortar System																															
	3	2022	ARMY	42	0	42																								42	
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10 **P-1 Line Item Number / Title:** 6580G02200 / Mortar Systems **Item Number / Title [DODIC]:** G02202 / Mtr Wpn Sys

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2024												Fiscal Year 2025												BALANCE	
O C C #	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2023	BAL DUE AS OF 1 OCT	Calendar Year 2024												Calendar Year 2025												
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G		S E P
120mm (M121) Mortar System																															
	1	2021	ARMY	18	18	0																							0		
	2	2022	ARMY	36	0	36	-	-	-	-	-	-	-	-	-	9	9	9	9										0		
120mm (M120A1) Mortar System																															
	3	2022	ARMY	42	0	42	-	-	-	-	-	-	-	-	30	12													0		
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	

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Exhibit P-21, Production Schedule: PB 2022 Army	Date: May 2021
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Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10	P-1 Line Item Number / Title: 6580G02200 / Mortar Systems	Item Number / Title [DODIC]: G02202 / Mtr Wpn Sys
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MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2022	1-8-5 For 2022	MAX For 2022	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	EFW Inc - Fort Worth, TX	10	20	30	15	5	28	33	3	5	28	33
2	TBS01 - TBS	10	20	30	15	5	28	33	3	5	28	33
3	TBS01 - TBS	10	20	30	15	5	28	33	3	5	28	33

Remarks:
 Note: FY 2022 quantity totals 78 each full systems. FY 2022 199 each cannon tubes are a component within the 120mm mortar weapon system and are therefore not captured in the quantity count within this procurement package.

"A" in the Delivery Schedule indicates the Contract Award Date.
Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles	P-1 Line Item Number / Title: 8181G01501 / XM320 Grenade Launcher Module (GLM)
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	264.679	0.717	5.969	8.666	-	8.666	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	264.679	0.717	5.969	8.666	-	8.666	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	264.679	0.717	5.969	8.666	-	8.666	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	14.991	4.780	2.787	3.611	-	3.611	-	-	-	-	-	-

Description:

This program supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). The M320 Grenade Launcher Module (GLM) is a 40mm low-velocity grenade launching weapon system that is a direct replacement to all M203 series of grenade launchers on M16 Rifles and M4 Carbines. The M320 Grenade Launcher Module (GLM) is a modular system that mounts under the barrel of the rifle or carbine. This weapon can also be used in the stand-alone configuration. The M320 Grenade Launcher Module (GLM) has an integrated leaf sight and some improved safety features. This weapon also has a side-loading unrestricted breech that permits the firing of longer 40mm low-velocity projectiles (NATO standard and non-standard). The M320 Grenade Launcher Module (GLM) is more reliable and safer because of the use of a more modern double-action trigger/firing system. The new pistol grip design eliminates the need to use the M4 magazine as a hand grip. The latest innovations in lightweight material composites improve durability. Procurement of hand-held Laser Range Finder (LRF) and Grenadier Sighting System (GSS) are delivered as system components, one each per system. M320 Grenade Launcher Modules (GLMs) will also be fitted with an additional system components, such as a leaf sight, barrel, improved butt stock, and a XM100 40mm fuze programmer, to support the High Explosive Air Burst (HEAB) capability to be delivered by the new 40mm Family of Ammunition (FOA).

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	0.717	5.969	4.194	-	4.194	-	-	-
ANG	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	-	4.318	-	4.318	-	-	-
AR	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	-	-	0.154	-	0.154	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	0.717	5.969	8.666	-	8.666	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles	P-1 Line Item Number / Title: 8181G01501 / XM320 Grenade Launcher Module (GLM)
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	G01501 / XM320 Grenade Launcher Module (GLM)	P-5a	A		- / 264.679	- / 0.717	- / 5.969	- / 8.666	- / -	- / 8.666
P-40	Total Gross/Weapon System Cost				- / 264.679	- / 0.717	- / 5.969	- / 8.666	- / -	- / 8.666

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY 2022 funding total includes \$8.645 million for Base, \$0.021 for Direct War, and \$0.0 million for Enduring Costs in the Base Budget.

FY 2022 Base procurement dollars in the amount of \$8.645 million supports M320 Grenade Launcher Module (GLM) system fielding efforts, procurement of Grenadier Sighting Systems (GSS) and required engineering studies to address the need for a new leaf sight, barrel, and improved butt stock. The Grenadier Sighting Systems (GSS) provides the ability to engage targets during day or night and is capable of multiple ballistic solutions, which can be differentiated by the user.

FY 2022 Enduring procurement dollars in the amount of \$0.021 million support procurement of fifteen (15) M320A1s.

In accordance with Section 1815 of the FY 2008 National Defense Act, (P.L.110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

Grenadier Sighting System (GSS), a required component of M320 GLM, is in production and the Army Acquisition Objective (AAO) is the same as the M320's Grenade Launcher Army Acquisition Objective (AAO) of 73,024. The M320 Grenade Launcher (GLM) weapon AAO has been met.

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10	P-1 Line Item Number / Title: 8181G01501 / XM320 Grenade Launcher Module (GLM)	Item Number / Title [DODIC]: G01501 / XM320 Grenade Launcher Module (GLM)

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (Units in Each)	-	-	-	-	-	-
Gross/Weapon System Cost (\$ in Millions)	264.679	0.717	5.969	8.666	-	8.666
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	264.679	0.717	5.969	8.666	-	8.666
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	264.679	0.717	5.969	8.666	-	8.666

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	14.991	4.780	2.787	3.611	-	3.611

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
M320A1 Grenade Launcher (GL) ^(†)	4.214	45,347	191.084	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laser Range Finder (LRF)	0.489	46,794	22.905	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tool Set/ASL	0.499	2,669	1.333	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arms Racks	1.064	3,448	3.667	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RIA Program Management Spt	-	-	0.824	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Buttstock & Leafsight	-	-	-	-	-	-	0.531	2,150	1.141	-	-	-	-	-	-	-	-	-
Grenadier Sighting System (GSS) ^(†)	-	-	-	-	-	-	1.900	2,150	4.085	1.510	1,916	2.894	-	-	-	1.510	1,916	2.894
<i>Subtotal: Recurring Cost</i>	-	-	219.813	-	-	-	-	-	5.226	-	-	2.894	-	-	-	-	-	2.894
<i>Subtotal: Flyaway Cost</i>	-	-	219.813	-	-	-	-	-	5.226	-	-	2.894	-	-	-	-	-	2.894
Hardware Cost																		
Recurring Cost																		
XM100 40mm Fuze Setter	-	-	-	-	-	-	-	-	-	0.841	1,916	1.611	-	-	-	0.841	1,916	1.611
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	1.611	-	-	-	-	-	1.611
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	-	-	-	1.611	-	-	-	-	-	1.611
Package Fielding Cost																		

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Exhibit P-5, Cost Analysis: PB 2022 Army												Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10						P-1 Line Item Number / Title: 8181G01501 / XM320 Grenade Launcher Module (GLM)						Item Number / Title [DODIC]: G01501 / XM320 Grenade Launcher Module (GLM)					
ID Code (A=Service Ready, B=Not Service Ready) : A												MDAP/MAIS Code:					

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Recurring Cost																		
Total Package Fielding (TPF)	-	-	4.640	-	-	-	-	-	-	-	-	0.864	-	-	-	-	-	0.864
<i>Subtotal: Recurring Cost</i>	-	-	4.640	-	-	-	-	-	-	-	-	0.864	-	-	-	-	-	0.864
<i>Subtotal: Package Fielding Cost</i>	-	-	4.640	-	-	-	-	-	-	-	-	0.864	-	-	-	-	-	0.864
Logistics Cost																		
Recurring Cost																		
Integrated Logistics Support (ILS)	-	-	2.271	-	-	-	-	-	-	-	-	0.285	-	-	-	-	-	0.285
New Equipment Training (NET)	-	-	0.366	-	-	-	-	-	-	-	-	0.395	-	-	-	-	-	0.395
<i>Subtotal: Recurring Cost</i>	-	-	2.637	-	-	-	-	-	-	-	-	0.680	-	-	-	-	-	0.680
<i>Subtotal: Logistics Cost</i>	-	-	2.637	-	-	-	-	-	-	-	-	0.680	-	-	-	-	-	0.680
Support - Acceptance Testing Cost																		
First Article Test	-	-	7.403	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	0.100
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	7.403	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	0.100
Support - Program Management Cost																		
Government Management	-	-	6.916	-	-	0.717	-	-	0.742	-	-	0.768	-	-	-	-	-	0.768
<i>Subtotal: Support - Program Management Cost</i>	-	-	6.916	-	-	0.717	-	-	0.742	-	-	0.768	-	-	-	-	-	0.768
Support - System Engineering Cost																		
System Engineering	-	-	17.700	-	-	-	-	-	-	-	-	1.748	-	-	-	-	-	1.748
<i>Subtotal: Support - System Engineering Cost</i>	-	-	17.700	-	-	-	-	-	-	-	-	1.748	-	-	-	-	-	1.748
Support - Training Cost																		
Equipment	-	-	5.603	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Support - Training Cost</i>	-	-	5.603	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost	14.991	-	264.679	4.780	-	0.717	2.787	-	5.969	3.611	-	8.666	-	-	-	3.611	-	8.666

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	-	-	-	-	-

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10	P-1 Line Item Number / Title: 8181G01501 / XM320 Grenade Launcher Module (GLM)	Item Number / Title [DODIC]: G01501 / XM320 Grenade Launcher Module (GLM)

ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:				
Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
	Total Obligation Authority	0.717	5.969	4.194	-	4.194
ANG	Quantity	-	-	-	-	-
	Total Obligation Authority	-	-	4.318	-	4.318
AR	Quantity	-	-	-	-	-
	Total Obligation Authority	-	-	0.154	-	0.154
Total:	Quantity	-	-	-	-	-
Secondary Distribution	Total Obligation Authority	0.717	5.969	8.666	-	8.666

(t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army								Date: May 2021				
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10			P-1 Line Item Number / Title: 8181G01501 / XM320 Grenade Launcher Module (GLM)					Item Number / Title [DODIC]: G01501 / XM320 Grenade Launcher Module (GLM)				
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
M320A1 Grenade Launcher (GL)	✓	2022	Capco / Grand Junction, CO	C / FFP	ACC-Picatinny, Picatinny, NJ	Dec 2021	Feb 2022	0	0.000	Y		
Grenadier Sighting System (GSS)		2021	Wilcox / Portsmouth, NH	C / FFP	ACC-Picatinny, Picatinny, NJ	Dec 2020	Mar 2021	2,150	1.900	Y		
Grenadier Sighting System (GSS)		2022	Wilcox / Portsmouth, NH	C / FFP	ACC-Picatinny, Picatinny, NJ	Dec 2021	Dec 2021	1,916	1.510	Y		

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles	P-1 Line Item Number / Title: 8190G01506 / Precision Sniper Rifle
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	315	456	515	-	515	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	5.747	8.895	11.040	-	11.040	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	5.747	8.895	11.040	-	11.040	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	5.747	8.895	11.040	-	11.040	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	18.244	19.507	21.437	-	21.437	-	-	-	-	-	-

Description:

The Precision Sniper Rifle (PSR) program supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). This program will become the primary Sniper Weapon System (SWS) in all Army Sniper Teams. It is a Non-Developmental Item (NDI) that is a multi-caliber, bolt-action sniper rifle, which is effective against personnel and materiel targets at extreme ranges. The Precision Sniper Rifle (PSR) provides increased probability of hit over the current M2010 Enhanced Sniper Rifle (ESR) configuration at distances beyond twelve-hundred (1200) meters, which enhances the sniper role in supporting combat operations and improves sniper survivability. The Precision Sniper Rifle (PSR) provides extended effective range by three-hundred (300) meters over M2010 Enhanced Sniper Rifle (ESR) out to fifteen-hundred (1500) meters, which increases stand-off distances ensuring overmatch against enemy counter sniper engagements and increases sniper capabilities. The Precision Sniper Rifle (PSR) also replaces the anti-materiel M107 semi-automatic .50 caliber sniper rifle, offering improved accuracy in a lighter weight package. The Precision Sniper Rifle (PSR) includes a sound suppressor and direct view optics with fire control capabilities. This allows snipers, when supplemented with a clip-on image intensifier or thermal sensor system, to effectively engage enemy snipers, as well as crew served and indirect fire weapons virtually undetected in any light condition.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	280	456	443	-	443	-	-	-
	Total Obligation Authority	5.123	8.895	9.501	-	9.501	-	-	-
ANG	Quantity	35	-	72	-	72	-	-	-
	Total Obligation Authority	0.624	-	1.539	-	1.539	-	-	-
Total: Secondary Distribution	Quantity	315	456	515	-	515	-	-	-
	Total Obligation Authority	5.747	8.895	11.040	-	11.040	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles	P-1 Line Item Number / Title: 8190G01506 / Precision Sniper Rifle
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	G01506 / Precision Sniper Rifle	P-5a	A		- / -	315 / 5.747	456 / 8.895	515 / 11.040	- / -	515 / 11.040
P-40	Total Gross/Weapon System Cost				- / -	315 / 5.747	456 / 8.895	515 / 11.040	- / -	515 / 11.040

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

FY 2022 funding total includes \$11.040 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Base procurement dollars in the amount of \$11.040 million supports the Active Army through procurement of Precision Sniper Rifle (PSR) Systems to include but not limited to direct view optics with fire control capabilities, optical augmentation devices, suppressors and other components of end items / basic issue items. Precision Sniper Rifle (PSR) will become the primary anti-personnel Sniper Weapon System (SWS) in all Army Sniper Teams. It is a Non-Developmental Item (NDI) that is a multi-caliber, bolt-action sniper rifle, which is effective against personnel and materiel targets at extreme ranges. The Precision Sniper Rifle (PSR) provides increased probability of hit over the current M2010 Enhanced Sniper Rifle (ESR) configuration at distances up to twelve-hundred (1200) meters and increases range out to fifteen-hundred (1500), which enhances the sniper role in supporting combat operations and improves sniper survivability.

Army Acquisition Objective (AAO): 2,800

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10	P-1 Line Item Number / Title: 8190G01506 / Precision Sniper Rifle	Item Number / Title [DODIC]: G01506 / Precision Sniper Rifle

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (Units in Each)	-	315	456	515	-	515
Gross/Weapon System Cost (\$ in Millions)	-	5.747	8.895	11.040	-	11.040
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	5.747	8.895	11.040	-	11.040
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	5.747	8.895	11.040	-	11.040

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	18.244	19.507	21.437	-	21.437

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Flyaway Cost																		
Recurring Cost																		
Precision Sniper Rifle ^(†)	-	-	-	14.159	315	4.460	15.930	456	7.264	18.221	515	9.384	-	-	-	18.221	515	9.384
Program Management	-	-	-	-	-	-	-	-	-	-	-	0.544	-	-	-	-	-	0.544
Engineering Support	-	-	-	-	-	0.309	-	-	0.385	-	-	0.350	-	-	-	-	-	0.350
Integrated Logistics Support (ILS)	-	-	-	-	-	0.179	-	-	0.229	-	-	0.225	-	-	-	-	-	0.225
Total Package Fielding (TPF)	-	-	-	-	-	0.140	-	-	0.178	-	-	0.225	-	-	-	-	-	0.225
New Equipment Training (NET)	-	-	-	-	-	0.659	-	-	0.839	-	-	0.312	-	-	-	-	-	0.312
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	5.747	-	-	8.895	-	-	11.040	-	-	-	-	-	11.040
<i>Subtotal: Flyaway Cost</i>	-	-	-	-	-	5.747	-	-	8.895	-	-	11.040	-	-	-	-	-	11.040
Gross/Weapon System Cost	-	-	-	18.244	315	5.747	19.507	456	8.895	21.437	515	11.040	-	-	-	21.437	515	11.040

Remarks:

No P-21 form is required for the Precision Sniper Rifle (PSR), as it is a Non-Developmental Item (NDI) Commercial Off-The-Shelf (COTS) solution. Weapon System Unit Cost (U/C) reflects all system components to include the rifle scope, suppressor, optical augmentation device and all other Components Of the End Item (COEI), Basic Issue Items (BI).

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	280	456	443	-	443

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Exhibit P-5, Cost Analysis: PB 2022 Army	Date: May 2021
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Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10	P-1 Line Item Number / Title: 8190G01506 / Precision Sniper Rifle	Item Number / Title [DODIC]: G01506 / Precision Sniper Rifle
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ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Total Obligation Authority	5.123	8.895	9.501	-	9.501
ANG					
Quantity	35	-	72	-	72
Total Obligation Authority	0.624	-	1.539	-	1.539
Total: Secondary Distribution					
Quantity	315	456	515	-	515
Total Obligation Authority	5.747	8.895	11.040	-	11.040

(t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10	P-1 Line Item Number / Title: 8190G01506 / Precision Sniper Rifle	Item Number / Title [DODIC]: G01506 / Precision Sniper Rifle
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Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty <i>(Each)</i>	Unit Cost <i>(\$ K)</i>	Specs Avail Now?	Date Revision Available	RFP Issue Date
Precision Sniper Rifle		2020	Barrett Firearms / Murfreesboro, TN	C / FFP	ACC-NJ Picatinny	Mar 2021	Jul 2021	315	14.159	N		
Precision Sniper Rifle		2021	Barrett Firearms / Murfreesboro, TN	C / FFP	USSCCOM/SOF AT\$ L - KR/ MacDill AFB, FL	Jul 2021	Oct 2021	456	15.930	Y		
Precision Sniper Rifle		2022	Barrett Firearms / Murfreesboro, TN	C / FFP	ACC-NJ Picatinny	Mar 2022	Sep 2022	515	18.221	N		

Remarks:
P-21 is not required, as all hardware items procured are Commercial Off the Shelf (COTS) or Commercial Off the Shelf/Non-Developmental Items (COTS/NDI).
Some system sub-components may be procured through the DLA Tailored Logistics Support contract where practical and cost effective.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles	P-1 Line Item Number / Title: 8194G01507 / COMPACT SEMI-AUTOMATIC SNIPER SYSTEM
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ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0604601A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	5,365	809	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	46.236	9.860	0.999	-	-	-	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	46.236	9.860	0.999	-	-	-	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	46.236	9.860	0.999	-	-	-	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	8.618	12.188	-	-	-	-	-	-	-	-	-	-

Description:

The Compact Semi-Automatic Sniper System supports the Army Modernization priority (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability, relative to peer competitors in complex terrain, as outlined in the National Defense Strategy (NDS). Brigade Combat Teams (BCT) require the capability to engage threat personnel with lethal and accurate fires at ranges exceeding the squad rifleman capability provided today. The Army is addressing this capability gap through the procurement of the Squad Designated Marksman Rifle (SDMR). The Squad Designated Marksman Rifle consists of a 7.62x51mm semi-automatic rifle with suppressor, optic, and additional authorized equipment. Additionally, the SDMR fulfills the procurement authority outlined in the National Defense Authorization Act for Fiscal Year 18, Pub. L, 115-91, Section 111.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	460	-	-	-	-	-	-	-
	Total Obligation Authority	7.417	0.999	-	-	-	-	-	-
ANG	Quantity	339	-	-	-	-	-	-	-
	Total Obligation Authority	2.373	-	-	-	-	-	-	-
AR	Quantity	10	-	-	-	-	-	-	-
	Total Obligation Authority	0.070	-	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	809	-	-	-	-	-	-	-
	Total Obligation Authority	9.860	0.999	-	-	-	-	-	-

Justification:

There is no FY 2022 budget request for this funding line.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles		P-1 Line Item Number / Title: 8194G01507 / COMPACT SEMI-AUTOMATIC SNIPER SYSTEM
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0604601A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L.110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.		
Army Acquisition Objective (AAO): 6,291		

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles	P-1 Line Item Number / Title: 8201G13501 / Carbine
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	150,598	22,846	-	699	-	699	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	245.670	31.514	5.411	4.434	-	4.434	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	245.670	31.514	5.411	4.434	-	4.434	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	245.670	31.514	5.411	4.434	-	4.434	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	1.631	1.379	-	6.343	-	6.343	-	-	-	-	-	-

Description:

The Carbine program supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). This funding is used to procure M4A1 Carbines for the Army and 30 round Enhanced Performance Magazine (EPM). The M4A1 Carbines are 5.56mm, gas operated, air-cooled weapons designed for lightness, speed, mobility and firepower. The M4A1 Carbine is a more compact weapon than the M16 rifle series since it uses a shorter barrel and collapsible stock. When compared to the M4 Carbine, the M4A1 Carbine has a (safe/semi-automatic/full automatic) trigger group, with a heavier barrel thickness to support increased sustained rates of fire, and an ambidextrous fire control selector. The M4A1 Carbine also includes a back-up iron sight and the adapter rail system to attach accessories and components.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	1,846	-	699	-	699	-	-	-
	Total Obligation Authority	1.183	5.411	4.434	-	4.434	-	-	-
ANG	Quantity	9,870	-	-	-	-	-	-	-
	Total Obligation Authority	14.255	-	-	-	-	-	-	-
AR	Quantity	11,130	-	-	-	-	-	-	-
	Total Obligation Authority	16.076	-	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	22,846	-	699	-	699	-	-	-
	Total Obligation Authority	31.514	5.411	4.434	-	4.434	-	-	-

Justification:

FY 2022 funding total includes \$3.961 million for Base, \$0 for Direct War, and \$0.473 for Enduring Costs in the Base Budget.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles		P-1 Line Item Number / Title: 8201G13501 / Carbine
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>FY 2022 Base procurement dollars in the amount of \$3.961 million procures fielding support teams and other ancillary items such as, but not limited to optics, speed loader magazines, suppressors, and spare parts. The M4A1 Carbine is produced with a heavier barrel to accommodate and sustain a higher rate of fire using the full automatic mode of fire and an ambidextrous selector. The fielding of the Carbines is critical to meet the Army modernization priorities goals providing capability that allows the Soldier to engage targets in full automatic mode of fire at a higher sustained rate of fire as compared to the M4 Carbine. The Enhanced Performance Magazine (EPM) decreases weapon wear, significantly increases reliability and durability and maintains terminal performance of the M4 and M16 family of weapons.</p> <p>FY 2022 Enduring procurement dollars in the amount of \$0.473 million procures 699 M4A1 Carbines.</p> <p>In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.</p> <p>M4A1's Army Acquisition Objective (AAO): 845,563</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles	P-1 Line Item Number / Title: 8205G14510 / Next Generation Squad Weapon
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ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0604601A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	3,983	12,217	-	12,217	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	-	-	35.822	97.087	-	97.087	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	-	-	35.822	97.087	-	97.087	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	-	-	35.822	97.087	-	97.087	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	8.994	7.947	-	7.947	-	-	-	-	-	-

Description:

This program supports both the National Defense Strategy of "Build a More Lethal Force" as well as the Army Modernization Priority of increasing "Soldier Lethality." The program supports these goals through enhancement of Joint Lethality in contested environments by means of elimination and/or minimization of close combat capability erosion; specifically, relative to peer competitors, in complex terrain, as outlined in the National Defense Strategy (NDS). This program supports the Soldier Lethality Cross Functional Team (CFT).

Next Generation Squad Weapons (NGSW) is a family of products that includes a Rifle (NGSW-R) and an Automatic Rifle (NGSW-AR) that integrate an advanced fire control (NGSW-FC) and common 6.8mm ammunition. The NGSW-R and NGSW-AR are the planned replacements for select weapons system for individual soldiers, squads, and/or platoons, capable of defeating protected and unprotected threats. The NGSW-R and the NGSW-AR ensure increased lethality against a broad spectrum of targets beyond current/legacy weapon capabilities; increased range, accuracy, and probability of hit; reduced engagement time; suppressed flash/sound signature; improved controllability and mobility.

The Next Generation Squad Weapons - Fire Control (NGSW-FC) is an advanced individual fire control device that supports the NGSW-R, NGSW-AR, and other individual and squad weapon systems. The NGSW-FC increases the probability of hit and decreases engagement time through a variable-powered direct view optic with integrated range finder, ballistic calculator, and digital display capable of providing an adjusted aim point. The NGSW-FC utilizes open architecture to deliver to an initial augmented core capability followed by increasing increments of capability over time as technology matures and evolves.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	3,983	12,217	-	12,217	-	-	-
	Total Obligation Authority	-	35.822	97.087	-	97.087	-	-	-
Total: Secondary Distribution	Quantity	-	3,983	12,217	-	12,217	-	-	-
	Total Obligation Authority	-	35.822	97.087	-	97.087	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity:
 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles **P-1 Line Item Number / Title:**
 8205G14510 / Next Generation Squad Weapon

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0604601A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-5	G14511 / Next Generation Squad Weapon-Automatic Rifle	P-5a	B		- / -	- / -	- / -	399 / 3.630	- / -	399 / 3.630
P-5	G14512 / NEXT GENERATION SQUAD WEAPON-RIFLE	P-5a, P-21	B		- / -	- / -	- / -	3,725 / 20.862	- / -	3,725 / 20.862
P-5	G14513 / Next Generation Squad Weapon - Fire Control	P-5a, P-21	B		- / -	- / -	3,983 / 35.822	8,093 / 72.595	- / -	8,093 / 72.595
P-40	Total Gross/Weapon System Cost				- / -	- / -	3,983 / 35.822	12,217 / 97.087	- / -	12,217 / 97.087

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:

FY 2022 funding total includes \$97.087 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Base procurement dollars in the amount of \$3.630 million supports the procurement and fielding of 399 Next Generation Squad Weapon Automatic Rifles (NGSW-AR) which is the planned replacement for the M249 Squad Automatic Weapon (SAW) within the Close Combat Force.

FY 2022 Base procurement dollars in the amount of \$20.862 million supports the procurement and fielding of 3,725 Next Generation Squad Weapon Rifles (NGSW-R) which is the planned replacement for the M4A1 Carbine within the Close Combat Force.

The NGSW-AR and NGSW-R ensures increased lethality against a broad spectrum of targets beyond current/legacy weapon capabilities; increased range, accuracy, and probability of hit; reduced engagement time; suppressed flash/sound signature; improved controllability and mobility. The NGSW-AR, NGSW-Rifle, NGSW-Fire Control and 6.8mm Common Cartridge are fielded concurrently to provide a squad level capability improvement to maintain overmatch against near peer enemy threats.

FY 2022 Base procurement dollars in the amount of \$72.595 million supports the procurement and fielding of 8,093 Next Generation Squad Weapons Fire Controls (NGSW-FC). And will have both close quarter and extended range capabilities and is integrated with both the Next Generation Squad Weapon-Rifle (NGSW-R) and the Next Generation Squad Weapon-Automatic Rifle (NGSW-AR). The NGSW-FC increases the probability of hit and decreases engagement time through a variable-powered direct view optic with integrated range finder, ballistic calculator, and digital display capable of providing an adjusted aim point. The NGSW-FC, NGSW-AR, NGSW-R and 6.8mm Common Cartridge are fielded concurrently to provide a squad level capability improvement to maintain overmatch against near peer enemy threats.

In FY 2022, funding in the amount of \$0.216M for manpower was realigned to Operations and Maintenance. Program support costs have been accurately updated to reflect the realignments. In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

Army Acquisition Objectives (AAOs):

- Next Generation Squad Weapons - Rifle (NGSW-R): 107,711
- Next Generation Squad Weapons - Automatic Rifle (NGSW-AR): 13,205
- Next Generation Squad Weapons - Fire Control (NGSW-FC): 120,916

Next Generation Squad Weapon - Automatic Rifle (G14511) and Next Generation Squad Weapon - Rifle (G14512) are new starts in FY 2022.

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Exhibit P-5, Cost Analysis: PB 2022 Army						Date: May 2021		
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10			P-1 Line Item Number / Title: 8205G14510 / Next Generation Squad Weapon			Item Number / Title [DODIC]: G14511 / Next Generation Squad Weapon-Automatic Rifle		
ID Code (A=Service Ready, B=Not Service Ready) : B						MDAP/MAIS Code:		
Resource Summary			Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (<i>Units in Each</i>)			-	-	-	399	-	399
Gross/Weapon System Cost (<i>\$ in Millions</i>)			-	-	-	3.630	-	3.630
Less PY Advance Procurement (<i>\$ in Millions</i>)			-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)			-	-	-	3.630	-	3.630
Plus CY Advance Procurement (<i>\$ in Millions</i>)			-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)			-	-	-	3.630	-	3.630
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>								
Initial Spares (<i>\$ in Millions</i>)			-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)			-	-	-	9.098	-	9.098

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
Next Generation Squad Weapon - Automatic Rifle ^(†)	-	-	-	-	-	-	-	-	-	7.321	399	2.921	-	-	-	7.321	399	2.921
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	2.921	-	-	-	-	-	2.921
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	-	-	-	2.921	-	-	-	-	-	2.921
Package Fielding Cost																		
Recurring Cost																		
Total Package Fielding	-	-	-	-	-	-	-	-	-	-	-	0.115	-	-	-	-	-	0.115
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.115	-	-	-	-	-	0.115
<i>Subtotal: Package Fielding Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.115	-	-	-	-	-	0.115
Logistics Cost																		
Recurring Cost																		
Integrated Logistic Support	-	-	-	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	0.100
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	0.100
<i>Subtotal: Logistics Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	0.100
Support - Data Cost																		
Technical Publications	-	-	-	-	-	-	-	-	-	-	-	0.044	-	-	-	-	-	0.044

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10		P-1 Line Item Number / Title: 8205G14510 / Next Generation Squad Weapon
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:
Item Number / Title [DODIC]: G14511 / Next Generation Squad Weapon-Automatic Rifle		

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
<i>Subtotal: Support - Data Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.044	-	-	-	-	-	0.044
Support - New Equipment Training (NET) Cost																		
Equipment	-	-	-	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	0.100
<i>Subtotal: Support - New Equipment Training (NET) Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.100	-	-	-	-	-	0.100
Support - Program Management Cost																		
Government Management	-	-	-	-	-	-	-	-	-	-	-	0.150	-	-	-	-	-	0.150
<i>Subtotal: Support - Program Management Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.150	-	-	-	-	-	0.150
Support - System Engineering Cost																		
System Engineering	-	-	-	-	-	-	-	-	-	-	-	0.200	-	-	-	-	-	0.200
<i>Subtotal: Support - System Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.200	-	-	-	-	-	0.200
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	9.098	399	3.630	-	-	-	9.098	399	3.630

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	-	-	399	-	399
	Total Obligation Authority	-	-	3.630	-	3.630
Total: Secondary Distribution	Quantity	-	-	399	-	399
	Total Obligation Authority	-	-	3.630	-	3.630

(†) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army							Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10			P-1 Line Item Number / Title: 8205G14510 / Next Generation Squad Weapon				Item Number / Title [DODIC]: G14511 / Next Generation Squad Weapon-Automatic Rifle					
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Next Generation Squad Weapon - Automatic Rifle		2022	TBD Contractor / TBD	C / FFP	ACC-NJ, Picatinny Arsenal, NJ	Nov 2021	May 2022	399	7.321	N		Jul 2021

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10	P-1 Line Item Number / Title: 8205G14510 / Next Generation Squad Weapon	Item Number / Title [DODIC]: G14512 / NEXT GENERATION SQUAD WEAPON-RIFLE

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (Units in Each)	-	-	-	3,725	-	3,725
Gross/Weapon System Cost (\$ in Millions)	-	-	-	20.862	-	20.862
Less PY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Net Procurement (P-1) (\$ in Millions)	-	-	-	20.862	-	20.862
Plus CY Advance Procurement (\$ in Millions)	-	-	-	-	-	-
Total Obligation Authority (\$ in Millions)	-	-	-	20.862	-	20.862

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (\$ in Millions)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (\$ in Thousands)	-	-	-	5.601	-	5.601

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
Next Generation Squad Weapon - Rifle (NGSW-R) ^(†)	-	-	-	-	-	-	-	-	-	3.451	3,725	12.855	-	-	-	3.451	3,725	12.855
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	12.855	-	-	-	-	-	12.855
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	-	-	-	12.855	-	-	-	-	-	12.855
Package Fielding Cost																		
Recurring Cost																		
Total Fielding Package	-	-	-	-	-	-	-	-	-	-	-	0.655	-	-	-	-	-	0.655
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.655	-	-	-	-	-	0.655
<i>Subtotal: Package Fielding Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.655	-	-	-	-	-	0.655
Logistics Cost																		
Recurring Cost																		
Integrated Logistic Support	-	-	-	-	-	-	-	-	-	-	-	0.600	-	-	-	-	-	0.600
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.600	-	-	-	-	-	0.600
<i>Subtotal: Logistics Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.600	-	-	-	-	-	0.600
Support - Acceptance Testing Cost																		
First Article Test	-	-	-	-	-	-	-	-	-	-	-	0.500	-	-	-	-	-	0.500

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10		P-1 Line Item Number / Title: 8205G14510 / Next Generation Squad Weapon
		Item Number / Title [DODIC]: G14512 / NEXT GENERATION SQUAD WEAPON-RIFLE
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
<i>Subtotal: Support - Acceptance Testing Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.500	-	-	-	-	-	0.500
Support - Data Cost																		
Technical Publications	-	-	-	-	-	-	-	-	-	-	-	0.500	-	-	-	-	-	0.500
<i>Subtotal: Support - Data Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.500	-	-	-	-	-	0.500
Support - Engineering Change Proposals Cost																		
Engineering Change Proposals	-	-	-	-	-	-	-	-	-	-	-	0.460	-	-	-	-	-	0.460
<i>Subtotal: Support - Engineering Change Proposals Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.460	-	-	-	-	-	0.460
Support - New Equipment Training (NET) Cost																		
Equipment	-	-	-	-	-	-	-	-	-	-	-	0.514	-	-	-	-	-	0.514
<i>Subtotal: Support - New Equipment Training (NET) Cost</i>	-	-	-	-	-	-	-	-	-	-	-	0.514	-	-	-	-	-	0.514
Support - Program Management Cost																		
Government Management	-	-	-	-	-	-	-	-	-	-	-	1.278	-	-	-	-	-	1.278
<i>Subtotal: Support - Program Management Cost</i>	-	-	-	-	-	-	-	-	-	-	-	1.278	-	-	-	-	-	1.278
Support - System Engineering Cost																		
System Engineering	-	-	-	-	-	-	-	-	-	-	-	3.500	-	-	-	-	-	3.500
<i>Subtotal: Support - System Engineering Cost</i>	-	-	-	-	-	-	-	-	-	-	-	3.500	-	-	-	-	-	3.500
Gross/Weapon System Cost	-	-	-	-	-	-	-	-	-	5.601	3,725	20.862	-	-	-	5.601	3,725	20.862

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	-	-	3,725	-	3,725
	Total Obligation Authority	-	-	20.862	-	20.862
Total: Secondary Distribution	Quantity	-	-	3,725	-	3,725
	Total Obligation Authority	-	-	20.862	-	20.862

(t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army							Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10			P-1 Line Item Number / Title: 8205G14510 / Next Generation Squad Weapon				Item Number / Title [DODIC]: G14512 / NEXT GENERATION SQUAD WEAPON-RIFLE					
Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Next Generation Squad Weapon - Rifle (NGSW-R) ^(†)		2022	TBD Contractor / TBD	C / FFP	ACC-NJ, Picatinny Arsenal, NJ	Nov 2021	May 2022	3,725	3.451	N		Jul 2021

^(†) indicates the presence of a P-21

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Exhibit P-21, Production Schedule: PB 2022 Army															Date: May 2021														
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10										P-1 Line Item Number / Title: 8205G14510 / Next Generation Squad Weapon										Item Number / Title [DODIC]: G14512 / NEXT GENERATION SQUAD WEAPON-RIFLE									

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2022														Fiscal Year 2023														BALANCE	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2021	BAL DUE AS OF 1 OCT	Calendar Year 2022														Calendar Year 2023														
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P					
Next Generation Squad Weapon - Rifle (NGSW-R)																																			
	1	2022	ARMY	3,725	0	3,725		A	-	-	-	-	-	-	315	315	315	315	315	315	315	315	315	315	315	315	315	260		0					
							O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S					
							C	O	E	A	E	A	P	A	U	U	U	E	C	O	E	A	E	A	A	U	U	A	S						
							T	V	C	N	B	R	R	Y	N	L	G	P	T	V	C	N	B	R	R	Y	N	L	G	P					

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Exhibit P-21, Production Schedule: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10		P-1 Line Item Number / Title: 8205G14510 / Next Generation Squad Weapon
		Item Number / Title [DODIC]: G14512 / NEXT GENERATION SQUAD WEAPON-RIFLE

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2022	1-8-5 For 2022	MAX For 2022	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	TBD Contractor - TBD	50	315	500	4	2	6	8	1	2	6	8

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-5, Cost Analysis: PB 2022 Army													Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10						P-1 Line Item Number / Title: 8205G14510 / Next Generation Squad Weapon						Item Number / Title [DODIC]: G14513 / Next Generation Squad Weapon - Fire Control						
ID Code (A=Service Ready, B=Not Service Ready) : B									MDAP/MAIS Code:									
Resource Summary				Prior Years		FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total				
Procurement Quantity (<i>Units in Each</i>)				-		-		3,983		8,093		-		8,093				
Gross/Weapon System Cost (<i>\$ in Millions</i>)				-		-		35.822		72.595		-		72.595				
Less PY Advance Procurement (<i>\$ in Millions</i>)				-		-		-		-		-		-				
Net Procurement (P-1) (<i>\$ in Millions</i>)				-		-		35.822		72.595		-		72.595				
Plus CY Advance Procurement (<i>\$ in Millions</i>)				-		-		-		-		-		-				
Total Obligation Authority (<i>\$ in Millions</i>)				-		-		35.822		72.595		-		72.595				
<i>(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)</i>																		
Initial Spares (<i>\$ in Millions</i>)				-		-		-		-		-		-		-		
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)				-		-		8.994		8.970		-		8.970				
Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.																		
Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
Hardware Cost																		
Recurring Cost																		
Next Generation Squad Weapons Fire Control ^(f)	-	-	-	-	-	-	7.750	3,983	30.868	7.927	8,093	64.154	-	-	-	7.927	8,093	64.154
Engineering Data	-	-	-	-	-	-	-	-	0.453	-	-	0.300	-	-	-	-	-	0.300
Technical Publications	-	-	-	-	-	-	-	-	0.935	-	-	0.370	-	-	-	-	-	0.370
Engineering Change Proposals	-	-	-	-	-	-	-	-	0.125	-	-	0.350	-	-	-	-	-	0.350
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	32.381	-	-	65.174	-	-	-	-	-	65.174
<i>Subtotal: Hardware Cost</i>	-	-	-	-	-	-	-	-	32.381	-	-	65.174	-	-	-	-	-	65.174
Package Fielding Cost																		
Recurring Cost																		
Total Package Fielding	-	-	-	-	-	-	-	-	0.547	-	-	0.720	-	-	-	-	-	0.720
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	0.547	-	-	0.720	-	-	-	-	-	0.720
<i>Subtotal: Package Fielding Cost</i>	-	-	-	-	-	-	-	-	0.547	-	-	0.720	-	-	-	-	-	0.720
Logistics Cost																		
Recurring Cost																		
Integrated Logistics Support (ILS)	-	-	-	-	-	-	-	-	0.204	-	-	0.300	-	-	-	-	-	0.300
<i>Subtotal: Recurring Cost</i>	-	-	-	-	-	-	-	-	0.204	-	-	0.300	-	-	-	-	-	0.300

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Exhibit P-5, Cost Analysis: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10	P-1 Line Item Number / Title: 8205G14510 / Next Generation Squad Weapon	Item Number / Title [DODIC]: G14513 / Next Generation Squad Weapon - Fire Control

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2020			FY 2021			FY 2022 Base			FY 2022 OCO			FY 2022 Total		
	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)	Unit Cost (\$ K)	Qty (Each)	Total Cost (\$ M)
<i>Subtotal: Logistics Cost</i>	-	-	-	-	-	-	-	-	0.204	-	-	0.300	-	-	-	-	-	0.300
Support - New Equipment Training (NET) Cost																		
Equipment	-	-	-	-	-	-	-	-	0.498	-	-	0.695	-	-	-	-	-	0.695
<i>Subtotal: Support - New Equipment Training (NET) Cost</i>	-	-	-	-	-	-	-	-	0.498	-	-	0.695	-	-	-	-	-	0.695
Support - Program Management Cost																		
Government Management	-	-	-	-	-	-	-	-	0.050	-	-	2.837	-	-	-	-	-	2.837
<i>Subtotal: Support - Program Management Cost</i>	-	-	-	-	-	-	-	-	0.050	-	-	2.837	-	-	-	-	-	2.837
Support - System Engineering Cost																		
System Engineering	-	-	-	-	-	-	-	-	1.773	-	-	2.500	-	-	-	-	-	2.500
<i>Subtotal: Support - System Engineering Cost</i>	-	-	-	-	-	-	-	-	1.773	-	-	2.500	-	-	-	-	-	2.500
Support - System Test and Evaluation Cost																		
Test and Evaluation Support	-	-	-	-	-	-	-	-	0.369	-	-	0.370	-	-	-	-	-	0.370
<i>Subtotal: Support - System Test and Evaluation Cost</i>	-	-	-	-	-	-	-	-	0.369	-	-	0.370	-	-	-	-	-	0.370
Gross/Weapon System Cost	-	-	-	-	-	-	8.994	3,983	35.822	8.970	8,093	72.595	-	-	-	8.970	8,093	72.595

Remarks:
N/A

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	-	3,983	8,093	-	8,093
	Total Obligation Authority	-	35.822	72.595	-	72.595
Total:	Quantity	-	3,983	8,093	-	8,093
Secondary Distribution	Total Obligation Authority	-	35.822	72.595	-	72.595

(t) indicates the presence of a P-5a

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Exhibit P-5a, Procurement History and Planning: PB 2022 Army							Date: May 2021					
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10			P-1 Line Item Number / Title: 8205G14510 / Next Generation Squad Weapon				Item Number / Title [DODIC]: G14513 / Next Generation Squad Weapon - Fire Control					

Cost Elements	O C O	FY	Contractor and Location	Method/Type or Funding Vehicle	Location of PCO	Award Date	Date of First Delivery	Qty (Each)	Unit Cost (\$ K)	Specs Avail Now?	Date Revision Available	RFP Issue Date
Next Generation Squad Weapons Fire Control ^(†)		2021	TBD Contractor / TBD	C / FFP	ACC-NJ, Picatinny Arsenal, NJ	Jul 2021	Apr 2022	3,983	7.750	N		Mar 2021
Next Generation Squad Weapons Fire Control ^(†)		2022	TBD Contractor / TBD	C / FFP	ACC-NJ, Picatinny Arsenal, NJ	Jan 2022	Aug 2022	8,093	7.927	N	Mar 2023	

^(†) indicates the presence of a P-21

Remarks:
N/A

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Exhibit P-21, Production Schedule: PB 2022 Army															Date: May 2021														
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10										P-1 Line Item Number / Title: 8205G14510 / Next Generation Squad Weapon										Item Number / Title [DODIC]: G14513 / Next Generation Squad Weapon - Fire Control									

Cost Elements <i>(Units in Each)</i>						Fiscal Year 2023										Fiscal Year 2024										BALANCE	
O C C O	M F R #	FY	SERVICE	PROC QTY	ACCEPT PRIOR TO 1 OCT 2022	BAL DUE AS OF 1 OCT	Calendar Year 2023										Calendar Year 2024										
							O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R		M A Y

Next Generation Squad Weapons Fire Control																															
1	2021	ARMY	3,983	1,875	2,108	400	400	400	400	400	108																				0
1	2022	ARMY	8,093	1,370	6,723	685	685	685	685	685	685	685	685	685	558																0

						O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P	O C T	N O V	D E C	J A N	F E B	M A R	A P R	M A Y	J U N	J U L	A U G	S E P
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Exhibit P-21, Production Schedule: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 10		P-1 Line Item Number / Title: 8205G14510 / Next Generation Squad Weapon
		Item Number / Title [DODIC]: G14513 / Next Generation Squad Weapon - Fire Control

MFR Ref #	Manufacturer Name - Location	Production Rates (Each / Month)			Procurement Leadtime (Months)							
		MSR For 2022	1-8-5 For 2022	MAX For 2022	Initial				Reorder			
					ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1	ALT Prior to Oct 1	ALT After Oct 1	Manufacturing PLT	Total After Oct 1
1	TBD Contractor - TBD	100	685	1,600	6	9	9	18	1	3	7	10

Remarks:
N/A

"A" in the Delivery Schedule indicates the Contract Award Date.

Note: Due to space limitations, quantities in the Exhibit P-21 delivery calendar are truncated and rounded based on the maximum quantity in the calendar as follows. If the maximum quantity is less than or equal to than 9,999, all quantities are shown as each. If the maximum quantity is between 10,000 and 999,999 all quantities are shown in thousands. If the maximum quantity is between 1,000,000 and 999,999,999 all quantities are shown in millions (rounded to the nearest thousand). If the maximum quantity is equal or greater than 1,000,000,000 all quantities are shown in billions (rounded to the nearest million).

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles	P-1 Line Item Number / Title: 8310G04700 / Common Remotely Operated Weapons Station
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	2,296.099	28.189	24.534	-	-	-	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	2,296.099	28.189	24.534	-	-	-	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	2,296.099	28.189	24.534	-	-	-	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Common Remotely Operated Weapons Station (CROWS) program supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). The M153 Common Remotely Operated Weapon Station (CROWS) is an integrated system that provides the capability to remotely operate all standard U.S. Army machine guns (i.e., M2 Heavy Barrel Machine Guns, MK-19 Grenade Machine Guns, M240B/L Medium Machine Guns and M249 Squad Automatic Weapons) and increase lethality solutions (to include Javelin) on a variety of vehicles from an Up-Armored High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) to a M1A2 Main Battle Tank. The CROWS system includes a three axis stabilized mount, a sensor suite with fire control software, and a vehicle integration kit. CROWS permits the gunner to manipulate the sight and weapon from under armor using a hand controller and a flat panel display. Missions can be carried out under conditions of varying visibility via the day camera or thermal camera. The laser range finder and three-axis stabilization allows for accurate fire on the move.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	28.189	24.534	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	28.189	24.534	-	-	-	-	-	-

Justification:

There is no FY 2022 budget request for this funding line.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles	P-1 Line Item Number / Title: 8635G15325 / Handgun
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	58.810	6.422	4.662	4.930	-	4.930	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	58.810	6.422	4.662	4.930	-	4.930	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	58.810	6.422	4.662	4.930	-	4.930	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	0.260	4.558	-	3.526	-	3.526	-	-	-	-	-	-

Description:

The Modular Handgun System (MHS) supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). Currently, the M9 Semi-Automatic Pistol, which has been utilized as the Department of Defense's personal defense weapon since 1985, is being replaced by the new M17 Full Size Modular Handgun . The M18 Compact Size Modular Handgun will replace M11 Handguns. The Modular Handgun System is a Commercial Off the Shelf/ Non-Developmental Item (COTS/NDI) which delivers a more capable system (weapon, ammo and magazines) consistent with the planned force structure and emerging operational needs of the Army. The Modular Handgun System addresses M9 Pistol and M11 Pistol shortcomings with improved lethality, target acquisition, ergonomics, reliability, durability, and maintainability. The Modular Handgun System is ambidextrous capable and accommodates 5th-95th percentile users via modular grips and access to all controls with one hand.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	6.422	4.662	4.930	-	4.930	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	6.422	4.662	4.930	-	4.930	-	-	-

Justification:

FY 2022 funding total includes \$4.677 million for Base, \$0.253 million for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Base procurement dollars in the amount of \$4.677 million procures fielding support teams and other ancillary items such as, but not limited to magazines, pouches, blank and marking round conversion kits, suppressor kits, white lights, aiming lasers, optics, speed loader magazines, suppressors, and spare parts in supporting the Army's Acquisition Objective (AAO) of 233,429 which was met in FY 2019. The Modular Handgun System (MHS) consists of the Full Size Handgun (M17), Compact Handgun (M18) and General Officer (GO) variants and stock will be used to replace coded out weapons, rather than refurbishment/overhaul as a cost saving initiative. The Full Size M17 replaces the existing M9 Semi-Automatic Pistol and the Compact M18 replaces the existing M11 Pistol. The Modular Handgun System

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 10: Weapons & Other Combat Vehicles		P-1 Line Item Number / Title: 8635G15325 / Handgun
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>(MHS) addresses M9 Semi-Automatic Pistol shortcomings with improved lethality, target acquisition, ergonomics, reliability, durability, and maintainability. The Modular Handgun System is ambidextrous capable and accommodates 5th-95th percentile users via modular grips and access to all controls with one hand. The Modular Handgun System is a Commercial Off the Shelf/Non-Developmental Item (COTS/NDI).</p> <p>FY 2022 Enduring procurement dollars in the amount of \$0.253 million supports the Active Army through the procurement of 1,398 Handgun weapon systems.</p> <p>In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L.110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.</p> <p>Handgun's Army Acquisition Objective (AAO) of 233,429 was met in FY 2019.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh	P-1 Line Item Number / Title: 3000GB3000 / MK-19 Grenade Machine Gun MODS
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ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0604601A	Other Related Program Elements: 0604802A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	46.435	4.477	6.444	13.027	-	13.027	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	46.435	4.477	6.444	13.027	-	13.027	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	46.435	4.477	6.444	13.027	-	13.027	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	5.989	2.543	-	2.543	-	-	-	-	-	-

Description:

The MK-19 Grenade Machine Gun MODS program supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). The MK-19 Mod 3 is a self-powered, air-cooled, 40mm automatic grenade machine gun with a firing rate of 325-375 rounds per minute. It is used to engage point targets up to 1,500 meters and provide suppressive fire at ranges up to 2,200 meters. Various system enhancements have been identified to improve the system by increasing operational capabilities and improving reliability, readiness, maintainability, and safety. The MK-19 is fielded with the MK-93 mount for vehicle utilization and the M3 or M205 Tripod for ground deployment during static defensive operations. An ongoing system improvement is application of an improved mechanical sight thru a Modification Work Order. The improved sight decreases the MK-19 logistic burden by reducing the number of parts as well as increasing Soldier lethality thru updated ballistic solutions. The Mounted Machine Gun Optic (MMO) will provide increased accuracy by equipping the MK-19 with a combined reflex and magnified optic to mounted CS/CSS troops, who currently have no optic. The Mounted Machine Gun Optic (MMO) will significantly improve target identification, target acquisition and effective engagement time at extended ranges while retaining the capability of short range, transition fire. MK-93 Improvement Kits will enhance hit performance and improve Soldier interface with optical sighting systems during on the move engagement by dampening mount movement. The XM101 Programmer Unit (PU) provides the means for fuze setting for the 40mm High Velocity, High Explosive Dual Purpose-Air Burst (HEDP-AB) capability for the MK-19 currently under development.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	4.477	6.444	13.027	-	13.027	-	-	-	-
Total:									
Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	4.477	6.444	13.027	-	13.027	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh **P-1 Line Item Number / Title:** 3000GB3000 / MK-19 Grenade Machine Gun MODS

ID Code (A=Service Ready, B=Not Service Ready): B **Program Elements for Code B Items:** 0604601A **Other Related Program Elements:** 0604802A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	GB3000 / MK-19 Grenade Machine Gun MODS (Increase Performance)		B		- / 46.435	- / 4.477	- / 6.444	- / 13.027	- / -	- / 13.027
P-40	Total Gross/Weapon System Cost				- / 46.435	- / 4.477	- / 6.444	- / 13.027	- / -	- / 13.027

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY 2022 funding total includes \$13.027 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Base procurement dollars in the amount of \$13.027 million will support the Active Army by procuring 170 MK-19 Improved Sights, 5,122 Mounted Machine Gun Optics (MMO), 41 MK93 Improvement Kits and 73 XM101 HEDP-AB Programmer Units. The MK-19 Improved Sights provides the Soldier with increased capability through updated ballistic solutions and reduces the Total Cost of Ownership by reducing the number of components included in the sight. The Mounted Machine Gun Optic (MMO) will provide Soldiers increased accuracy by equipping the MK19 with a combined reflex and magnified optic. The MMO will significantly improve target identification, target acquisition and effective engagement time at extended ranges while retaining the capability of short range, transition fire. The MK93 Improvement Kit is an upgrade to the standard MK93 vehicle mount and will enhance hit performance and improve Soldier interface with optical sighting systems during on the move engagement by dampening mount movement. The XM101 Programmer Unit (PU) provides the fuze setting capability for the 40mm High Velocity, (HEDP-AB) round for the MK19 currently under development.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20	P-1 Line Item Number / Title: 3000GB3000 / MK-19 Grenade Machine Gun MODS	Modification Number / Title: GB3000 / MK-19 Grenade Machine Gun MODS

ID Code (A=Service Ready, B=Not Service Ready) : B	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	46.435	4.477	6.444	13.027	-	13.027
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	46.435	4.477	6.444	13.027	-	13.027
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	46.435	4.477	6.444	13.027	-	13.027

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	5.989	2.543	-	2.543

Description:

This program supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). The MK-19 is a self-powered, air-cooled, 40mm automatic grenade machine gun capable of a firing rate of 325-375 rounds per minute. It is used to engage point targets up to 1,500 meters and provide suppressive fire at ranges up to 2,200 meters. Since the initial fielding of the MK-19, various system enhancements have been identified to further improve the system by increasing operational capabilities and improving reliability, readiness, maintainability, and safety.

MOD 1: MK-19 Grenade Machine Gun (GMG) Improved Rear Sight Kits - Application of an enhanced mechanical sight that will improve operational capability and reliability of the MK-19.

MOD 2: The Mounted Machine Gun Optic (MMO) will provide increased accuracy by equipping the MK-19 with a combined reflex and magnified optic to mounted CS/CSS troops, who currently have no optic. The Mounted Machine Gun Optic (MMO) will significantly improve target identification, target acquisition and effective engagement time at extended ranges while retaining the capability of short range, transition fire.

MOD 3: The MK-93 Improvement Kits will enhance hit performance and improve Soldier interface with optical sighting systems during in vehicle on the move engagement by dampening mount movement.

MOD 4: The XM101 HEDP-AB Programmer Unit (PU) provides the means for fuze settings to include the 40mm High Velocity, High Explosive Dual Purpose-Air Burst (HEDP-AB) round capability for the MK-19 currently under development.

MOD 5: Completed Modifications - Denotes funding provided in prior years for completed modifications to include Tactical Engagement Simulators, M3/M205 Tripods and legacy Vehicle Mounts. This element was added specifically to reduce the number of pages of the submission bringing focus to only those modifications funded in the current FYDP.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	4.477	6.444	13.027	-	13.027
Total: Secondary Distribution	Quantity	-	-	-	-	-
	Total Obligation Authority	4.477	6.444	13.027	-	13.027

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Exhibit P-3a, Individual Modification: PB 2022 Army						Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20			P-1 Line Item Number / Title: 3000GB3000 / MK-19 Grenade Machine Gun MODS			Modification Number / Title: GB3000 / MK-19 Grenade Machine Gun MODS	
ID Code (A=Service Ready, B=Not Service Ready) : B				MDAP/MAIS Code:			
Models of Systems Affected: MK-19 Grenade Machine Gun		Modification Type: Increase Performance			Related RDT&E PEs: 0604802A		
Financial Plan	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Procurement							
Modification Item 1 of 5: MK19 GMG Improved Rear Sights							
B Kits							
Recurring							
MK19 GMG Improved Rear Sight	4,784 / 3.784	500 / 1.964	995 / 0.396	170 / 0.079	- / -	170 / 0.079	
Engineering Support	- / 0.016	- / 0.584	- / 0.180	- / 0.210	- / -	- / 0.210	
Integrated Logistical Support	- / 0.225	- / 0.325	- / 0.075	- / 0.040	- / -	- / 0.040	
First Destination Transportation	- / 0.030	- / 0.025	- / 0.020	- / 0.002	- / -	- / 0.002	
Testing	- / 0.200	- / -	- / -	- / -	- / -	- / -	
Testing (First Article)	- / 0.800	- / -	- / -	- / -	- / -	- / -	
Engineering Study	- / 0.500	- / -	- / -	- / -	- / -	- / -	
Fielding	- / 0.200	- / -	- / 0.235	- / 0.300	- / -	- / 0.300	
Program Management Support	- / 0.614	- / 0.187	- / 0.100	- / 0.059	- / -	- / 0.059	
Subtotal: Recurring	4,784 / 9.369	500 / 3.085	995 / 1.006	170 / 0.690	- / -	170 / 0.690	
Subtotal: MK19 GMG Improved Rear Sights	4,784 / 9.369	500 / 3.085	995 / 1.006	170 / 0.690	- / -	170 / 0.690	
Modification Item 2 of 5: Mounted Machine Gun Optic (MMO)							
B Kits							
Recurring							
Mounted Machine Gun Optic (MMO)	60 / 0.175	519 / 1.037	1,076 / 2.537	5,122 / 8.700	- / -	5,122 / 8.700	
Engineering Support	- / 0.105	- / 0.106	- / 0.493	- / 0.300	- / -	- / 0.300	
Integrated Logistical Support	- / 0.075	- / 0.100	- / 0.175	- / 0.300	- / -	- / 0.300	
First Destination Transportation	- / 0.020	- / 0.020	- / 0.020	- / -	- / -	- / -	
Testing (First Article)	- / 0.100	- / -	- / -	- / -	- / -	- / -	
Engineering Study	- / 0.070	- / -	- / 0.707	- / -	- / -	- / -	
Fielding	- / 0.150	- / -	- / 0.400	- / 0.100	- / -	- / 0.100	
Program Support	- / 0.150	- / 0.129	- / 0.656	- / 0.200	- / -	- / 0.200	
New Equipment Training	- / -	- / -	- / 0.450	- / -	- / -	- / -	
Subtotal: Recurring	60 / 0.845	519 / 1.392	1,076 / 5.438	5,122 / 9.600	- / -	5,122 / 9.600	
Subtotal: Mounted Machine Gun Optic (MMO)	60 / 0.845	519 / 1.392	1,076 / 5.438	5,122 / 9.600	- / -	5,122 / 9.600	
Modification Item 3 of 5: MK93 Improvement Kits							

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Exhibit P-3a, Individual Modification: PB 2022 Army						Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20			P-1 Line Item Number / Title: 3000GB3000 / MK-19 Grenade Machine Gun MODS			Modification Number / Title: GB3000 / MK-19 Grenade Machine Gun MODS	
ID Code (A=Service Ready, B=Not Service Ready) : B					MDAP/MAIS Code:		
Models of Systems Affected: MK-19 Grenade Machine Gun			Modification Type: Increase Performance			Related RDT&E PEs: 0604802A	
Financial Plan	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
B Kits							
Recurring							
MK93 Improvement Kits	- / -	- / -	- / -	41 / 0.603	- / -	41 / 0.603	
Engineering Support	- / -	- / -	- / -	- / 0.246	- / -	- / 0.246	
Integrated Logistical Support	- / -	- / -	- / -	- / 0.075	- / -	- / 0.075	
First Destination Transport	- / -	- / -	- / -	- / 0.008	- / -	- / 0.008	
Fielding	- / -	- / -	- / -	- / 0.200	- / -	- / 0.200	
New Equipment Training	- / -	- / -	- / -	- / 0.175	- / -	- / 0.175	
Program Management	- / -	- / -	- / -	- / 0.142	- / -	- / 0.142	
<i>Subtotal: Recurring</i>	- / -	- / -	- / -	41 / 1.449	- / -	41 / 1.449	
<i>Subtotal: MK93 Improvement Kits</i>	- / -	- / -	- / -	41 / 1.449	- / -	41 / 1.449	
Modification Item 4 of 5: XM101 HEDP-AB Programmer Unit							
B Kits							
Recurring							
XM101 HEDP-AB Programmer	- / -	- / -	- / -	73 / 1.040	- / -	73 / 1.040	
Engineering	- / -	- / -	- / -	- / 0.079	- / -	- / 0.079	
Integrated Logistical Support	- / -	- / -	- / -	- / 0.035	- / -	- / 0.035	
New Equipment Training	- / -	- / -	- / -	- / 0.050	- / -	- / 0.050	
Program Management	- / -	- / -	- / -	- / 0.084	- / -	- / 0.084	
<i>Subtotal: Recurring</i>	- / -	- / -	- / -	73 / 1.288	- / -	73 / 1.288	
<i>Subtotal: XM101 HEDP-AB Programmer Unit</i>	- / -	- / -	- / -	73 / 1.288	- / -	73 / 1.288	
Modification Item 5 of 5: Completed Modifications							
A Kits							
Recurring							
Completed Modifications	2,394 / 36.221	- / -	- / -	- / -	- / -	- / -	
<i>Subtotal: Recurring</i>	2,394 / 36.221	- / -	- / -	- / -	- / -	- / -	
<i>Subtotal: Completed Modifications</i>	2,394 / 36.221	- / -	- / -	- / -	- / -	- / -	
<i>Subtotal: Procurement, All Modification Items</i>	7,238 / 46.435	1,019 / 4.477	2,071 / 6.444	5,406 / 13.027	- / -	5,406 / 13.027	
Installation							
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	- / -	- / -	

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Exhibit P-3a, Individual Modification: PB 2022 Army						Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20			P-1 Line Item Number / Title: 3000GB3000 / MK-19 Grenade Machine Gun MODS			Modification Number / Title: GB3000 / MK-19 Grenade Machine Gun MODS	
ID Code (A=Service Ready, B=Not Service Ready) : B					MDAP/MAIS Code:		
Models of Systems Affected: MK-19 Grenade Machine Gun			Modification Type: Increase Performance			Related RDT&E PEs: 0604802A	
Financial Plan	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	
Total							
Total Cost (Procurement + Support + Installation)		46.435	4.477	6.444	13.027	-	13.027

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20		P-1 Line Item Number / Title: 3000GB3000 / MK-19 Grenade Machine Gun MODS	
		Modification Number / Title: GB3000 / MK-19 Grenade Machine Gun MODS	
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:	
Modification Item 1 of 5: MK19 GMG Improved Rear Sights			
Manufacturer Information			
Manufacturer Name: Imperial Machine & Tool		Manufacturer Location: Columbia, NJ	
Administrative Leadtime (<i>in Months</i>): 5		Production Leadtime (<i>in Months</i>): 6	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates	Mar 2020	Mar 2021	Mar 2022
Delivery Dates	Jan 2021	Jan 2022	Jan 2023
Installation Information			
Method of Implementation (Organic): Installed by Troops		Installation Quantity: 0	

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20		P-1 Line Item Number / Title: 3000GB3000 / MK-19 Grenade Machine Gun MODS	
		Modification Number / Title: GB3000 / MK-19 Grenade Machine Gun MODS	
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:	
Modification Item 2 of 5: Mounted Machine Gun Optic (MMO)			
Manufacturer Information			
Manufacturer Name: BCF Solutions		Manufacturer Location: Chantilly, VA	
Administrative Leadtime (in Months): 1		Production Leadtime (in Months): 4	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates	Jun 2020	Mar 2021	Mar 2022
Delivery Dates	Sep 2020	Sep 2021	Sep 2022
Installation Information			
Method of Implementation (Organic): Installed by Troops		Installation Quantity: 0	

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20		P-1 Line Item Number / Title: 3000GB3000 / MK-19 Grenade Machine Gun MODS	
		Modification Number / Title: GB3000 / MK-19 Grenade Machine Gun MODS	
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:	
Modification Item 3 of 5: MK93 Improvement Kits			
Manufacturer Information			
Manufacturer Name: American Rheinmetall Systems		Manufacturer Location: Biddeford, ME	
Administrative Leadtime (<i>in Months</i>): 9		Production Leadtime (<i>in Months</i>): 7	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates	Mar 2020	Apr 2021	Apr 2022
Delivery Dates	Oct 2020	Jan 2022	Jan 2023
Installation Information			
Method of Implementation (Organic): Installed by Troops		Installation Quantity: 0	

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20		P-1 Line Item Number / Title: 3000GB3000 / MK-19 Grenade Machine Gun MODS	
		Modification Number / Title: GB3000 / MK-19 Grenade Machine Gun MODS	
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:	
Modification Item 4 of 5: XM101 HEDP-AB Programmer Unit			
Manufacturer Information			
Manufacturer Name: American Rheinmetall Systems		Manufacturer Location: Biddeford, ME	
Administrative Leadtime (in Months): 7		Production Leadtime (in Months): 7	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates			Mar 2022
Delivery Dates			Jan 2023
Installation Information			
Method of Implementation (Organic): Installed by Troops			Installation Quantity: 0

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20		P-1 Line Item Number / Title: 3000GB3000 / MK-19 Grenade Machine Gun MODS	
		Modification Number / Title: GB3000 / MK-19 Grenade Machine Gun MODS	
ID Code (A=Service Ready, B=Not Service Ready) : B		MDAP/MAIS Code:	
Modification Item 5 of 5: Completed Modifications			
Manufacturer Information			
Manufacturer Name: NA		Manufacturer Location: NA	
Administrative Leadtime (in Months):		Production Leadtime (in Months):	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates			
Delivery Dates			
Installation Information			
Method of Implementation (Organic): Installed by Troops		Installation Quantity: 0	

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh	P-1 Line Item Number / Title: 3005GZ1700 / M777 Mods
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	152.895	2.367	9.783	21.976	-	21.976	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	152.895	2.367	9.783	21.976	-	21.976	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	152.895	2.367	9.783	21.976	-	21.976	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Lightweight 155mm Howitzer (LW155), also known as the M777A2, is a Joint Service program between the US Marine Corps (USMC) and the US Army which provides direct, reinforcing, general support fires to maneuver forces and direct support artillery. The LW155 was first introduced into the US Marine Corps (USMC) in April 2005 and the Marines have fielded the howitzer to all active units. The Army fielded the howitzer to its Stryker Brigade Combat teams (SBCT), Fires Brigades and National Guard. Fielding of the Infantry Brigade Combat Teams (IBCT) was completed in FY 2018. The LW155 saw extensive action in Afghanistan, receiving high marks for its performance. It replaces all howitzers in all USMC missions and replaces the M198 howitzer as the general support artillery for light forces in the Army. The LW155 fires unassisted projectiles to a range of 30 kilometers (km) and assisted projectiles to 40km. The addition of the digital fire control system enables the weapon to program and fire the improved Excalibur precision-guided munitions to ranges in excess of 40km with better than 10-meter Circular Error Probable (CEP) accuracy. The LW155 is the first ground combat system whose major structures are made of high strength titanium alloy and the system makes extensive use of hydraulics to operate the breech, load tray, recoil and wheel arms. The combination of titanium structures and the use of hydraulic systems resulted in a significant weight savings of 7,000 pounds over the M198 system. Compared to the M198, the LW155 emplaces three-times faster and displaces four-times faster. It traverses 32-percent more terrain worldwide and is 70-percent more survivable than the M198. It is a successful joint service program between the USMC and US Army working together to develop, produce, field, and sustain the howitzer. The howitzer will be going through obsolescent replacement of electronic components in its digital fire control system, since it has been in the field for more than ten years.

This budget line item provides funding for various hardware and software modification and modernization efforts such as Digital Fire Control System (DFCS) component refresh, integration of upgraded components, and interoperability upgrades including M-Code satellite signal in support of the M777A2 program.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	2.367	9.783	21.976	-	21.976	-	-	-	-
Total:									
Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	2.367	9.783	21.976	-	21.976	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh	P-1 Line Item Number / Title: 3005GZ1700 / M777 Mods
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/MAIS Code	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)	Quantity / Total Cost (Each) / (\$ M)
P-3a	GZ1700 / M777 Mods (Increase Performance)		A		- / 152.895	- / 2.367	- / 9.783	- / 21.976	- / -	- / 21.976
P-40	Total Gross/Weapon System Cost				- / 152.895	- / 2.367	- / 9.783	- / 21.976	- / -	- / 21.976

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Justification:
 FY 2022 funding total includes \$21.976 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 funding in the amount of \$21.976 million will support procurement of Radio Integration Kits (cables, brackets, etc.) and other modernization efforts to the Digital Fire Control System (DFCS). Radio Integration Kits modification enables more secure radio communication and facilitates new encryption protocol interoperability between artillery and supported forces as required per HQDA EXORD 052-17. The new radio will provide the ability to perform voice and data functions over the same radio which increases operational flexibility for firing units. Modernization efforts to the Digital Fire Control System (DFCS) will enable continued system readiness. FY 2022 funding continues the retrofit of previously procured hardware and software modifications.

Net funding increase of \$12.193 million from FY 2021 to FY 2022 reflects the commencement of the procurement of the Radio Integration Kits.

FY 2021 Base procurement dollars in the amount of \$9.783 million provides for the Modifications of M777A2 Towed Howitzer and Digital Fire Control System to address obsolescence and interoperability challenges as well as installation of modification kits. Funding also supports qualification and integration of future engineering changes such as integration kits for a new radio to allow new encryption protocols. Modifications include upgrades to the Digital Fire Control System and software operating system updates to ensure continued system supportability. Funding also provides for continuing retrofit of previously procured hardware items such as, Improved Power Conditioning Control Module (I-PCCM), Hydraulic Power Assist Kit (HyPAK), Mission Computer (MSC-R), and Chief of Section Display (CSD-R).

"In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities."

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20	P-1 Line Item Number / Title: 3005GZ1700 / M777 Mods	Modification Number / Title: GZ1700 / M777 Mods

ID Code (A=Service Ready, B=Not Service Ready) : A	MDAP/MAIS Code:
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Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	152.895	2.367	9.783	21.976	-	21.976
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	152.895	2.367	9.783	21.976	-	21.976
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	152.895	2.367	9.783	21.976	-	21.976

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-

Description:

Mod 1- (Retrofit and Composite Fielding Activities) Funding will support field retrofits of previously contracted Engineering Change Proposals for items such as the Improved Power Conditioning Control Module (I-PCCM), Hydraulic Power Assist Kit (HyPAK), Mission Computer (MSC-R), Chief of Section Display (CSD-R) and upgraded software.

Mod 2- (Digital Fire Control System Modifications) - Funding will address security and supportability issues through Software and Hardware Engineering Change Proposals. Specific Digital Fire Control Electronic Components to be procured and fielded such as: New Digital Fire Control Computers and Display Units and Radio Integration Kits. These components are required to support security and obsolescence issues.

Note: Program management funds are now funded by Operations and Maintenance, Army (OMA) funds.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Army	Quantity	-	-	-	-	-
	Total Obligation Authority	2.367	9.783	21.976	-	21.976
Total: Secondary Distribution	Quantity	-	-	-	-	-
	Total Obligation Authority	2.367	9.783	21.976	-	21.976

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Exhibit P-3a, Individual Modification: PB 2022 Army					Date: May 2021		
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20			P-1 Line Item Number / Title: 3005GZ1700 / M777 Mods			Modification Number / Title: GZ1700 / M777 Mods	
ID Code (A=Service Ready, B=Not Service Ready) : A					MDAP/MAIS Code:		
Models of Systems Affected: M777A2			Modification Type: Increase Performance			Related RDT&E PEs:	
Financial Plan	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Procurement							
Modification Item 1 of 4: Retrofit and Composite Fielding Activities							
A Kits							
Recurring							
Retrofit and Composite Fielding Activiti	- / 25.263	- / 0.881	- / 1.100	- / 0.605	- / -	- / 0.605	
<i>Subtotal: Recurring</i>	- / 25.263	- / 0.881	- / 1.100	- / 0.605	- / -	- / 0.605	
<i>Subtotal: Retrofit and Composite Fielding Activities</i>	- / 25.263	- / 0.881	- / 1.100	- / 0.605	- / -	- / 0.605	
Modification Item 2 of 4: Digital Fire Control System Modifications							
A Kits							
Non-Recurring							
Engineering Change Proposal	- / 3.582	- / 0.630	- / 8.683	- / -	- / -	- / -	
Radio Integration Kits	- / -	- / -	- / -	- / 21.371	- / -	- / 21.371	
Software Integration	- / 2.700	- / -	- / -	- / -	- / -	- / -	
Electronic Communication Components	490 / 9.287	- / -	- / -	- / -	- / -	- / -	
<i>Subtotal: Non-Recurring</i>	490 / 15.569	- / 0.630	- / 8.683	- / 21.371	- / -	- / 21.371	
<i>Subtotal: Digital Fire Control System Modifications</i>	490 / 15.569	- / 0.630	- / 8.683	- / 21.371	- / -	- / 21.371	
Modification Item 3 of 4: Program Management							
A Kits							
Recurring							
Program Management	- / 3.062	- / 0.856	- / -	- / -	- / -	- / -	
<i>Subtotal: Recurring</i>	- / 3.062	- / 0.856	- / -	- / -	- / -	- / -	
<i>Subtotal: Program Management</i>	- / 3.062	- / 0.856	- / -	- / -	- / -	- / -	
Modification Item 4 of 4: Previous Modifications							
A Kits							
Non-Recurring							
Previous Modifications	- / 109.001	- / -	- / -	- / -	- / -	- / -	
<i>Subtotal: Non-Recurring</i>	- / 109.001	- / -	- / -	- / -	- / -	- / -	
<i>Subtotal: Previous Modifications</i>	- / 109.001	- / -	- / -	- / -	- / -	- / -	
<i>Subtotal: Procurement, All Modification Items</i>	490 / 152.895	- / 2.367	- / 9.783	- / 21.976	- / -	- / 21.976	
Installation							
<i>Subtotal: Installation</i>	- / -	- / -	- / -	- / -	- / -	- / -	

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Exhibit P-3a, Individual Modification: PB 2022 Army					Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20			P-1 Line Item Number / Title: 3005GZ1700 / M777 Mods		Modification Number / Title: GZ1700 / M777 Mods	
ID Code (A=Service Ready, B=Not Service Ready) : A				MDAP/MAIS Code:		
Models of Systems Affected: M777A2		Modification Type: Increase Performance			Related RDT&E PEs:	
Financial Plan	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)	Qty (Each) / Total Cost (\$ M)
Total						
Total Cost (Procurement + Support + Installation)	152.895	2.367	9.783	21.976	-	21.976

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20		P-1 Line Item Number / Title: 3005GZ1700 / M777 Mods	
Modification Number / Title: GZ1700 / M777 Mods			
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:	
Modification Item 1 of 4: Retrofit and Composite Fielding Activities			
Manufacturer Information			
Manufacturer Name: TBD		Manufacturer Location: TBD	
Administrative Leadtime (in Months): 3		Production Leadtime (in Months): 2	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates	Jan 2020	Jan 2021	Jan 2022
Delivery Dates	Mar 2020	Mar 2021	Mar 2022
Installation Information			
Method of Implementation (Organic): Contract Options		Installation Quantity: 0	

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20		P-1 Line Item Number / Title: 3005GZ1700 / M777 Mods	
ID Code (A=Service Ready, B=Not Service Ready) : A		Modification Number / Title: GZ1700 / M777 Mods	
MDAP/MAIS Code:			
Modification Item 2 of 4: Digital Fire Control System Modifications			
Manufacturer Information			
Manufacturer Name: Multiple Vendors		Manufacturer Location: Multiple Locations	
Administrative Leadtime (in Months): 3		Production Leadtime (in Months): 3	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates	Jan 2020	Jan 2021	May 2022
Delivery Dates	Mar 2020	Mar 2021	Jul 2022
Installation Information			
Method of Implementation (Organic): Contracts		Installation Quantity: 0	

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20		P-1 Line Item Number / Title: 3005GZ1700 / M777 Mods	
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:	
Modification Item 3 of 4: Program Management			
Manufacturer Information			
Manufacturer Name: TBD		Manufacturer Location: TBD	
Administrative Leadtime (<i>in Months</i>): 1		Production Leadtime (<i>in Months</i>): 1	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates	Oct 2019		
Delivery Dates	Nov 2019		
Installation Information			
Method of Implementation (Organic): MIPR to PM TAS and Contract Options			Installation Quantity: 0

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Exhibit P-3a, Individual Modification: PB 2022 Army		Date: May 2021	
Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 20		P-1 Line Item Number / Title: 3005GZ1700 / M777 Mods	
		Modification Number / Title: GZ1700 / M777 Mods	
ID Code (A=Service Ready, B=Not Service Ready) : A		MDAP/MAIS Code:	
Modification Item 4 of 4: Previous Modifications			
Manufacturer Information			
Manufacturer Name: Various		Manufacturer Location: Various	
Administrative Leadtime (in Months):		Production Leadtime (in Months):	
Dates	FY 2020	FY 2021	FY 2022
Contract Dates			
Delivery Dates			
Installation Information			
Method of Implementation (Organic): Component hardware procurements		Installation Quantity: 0	

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh	P-1 Line Item Number / Title: 3010GB3007 / M4 Carbine Mods
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	951.747	17.595	4.824	-	-	-	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	951.747	17.595	4.824	-	-	-	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	951.747	17.595	4.824	-	-	-	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The M4 Carbine Mods program supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). The M4 Carbine Modification Program provides combat optics, a Close Quarters Battle Kit (CQBK), an Enhanced Performance Magazine (EPM), 5.56mm suppressor, color modifications, and M4 to M4A1 carbine upgrade kits. The Improved Weapons Cleaning Kit (IWCK) contains necessary items to conduct a thorough and efficient cleaning of both weapon and optic, and has been reconfigured into: Individual Kit and Team Kit. The 5.56 Enhanced Performance Magazine (EPM) decreases weapon wear, significantly increases reliability, durability, readiness and maintains terminal performance of the M4 and M16 family of weapons. The 5.56mm suppressor and color modifications reduce the sound and visual signatures of the M4/M4A1 carbine as well as increase the difficulty of enemy forces to easily distinguish the Close Combat Force (CCFT) and other units. The M4 Product Improvement Program converts all fielded M4 Carbines to M4A1 Carbine configuration to include the M4A1 heavy barrel assembly and full auto trigger mechanism and adding new ambidextrous fire control selector assembly.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	6.015	4.824	-	-	-	-	-	-
ANG	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	10.689	-	-	-	-	-	-	-
AR	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	0.891	-	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	17.595	4.824	-	-	-	-	-	-

Justification:

There is no FY 2022 budget request for this program.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh	P-1 Line Item Number / Title: 3010GB3007 / M4 Carbine Mods	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

In accordance with Section 1815 of the FY 2008 National Defense Act, (P.L.110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh	P-1 Line Item Number / Title: 3015GB4000 / M2 50 Cal Machine Gun MODS
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0604601A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	401.210	6.090	-	3.612	-	3.612	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	401.210	6.090	-	3.612	-	3.612	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	401.210	6.090	-	3.612	-	3.612	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The M2 .50 Cal Machine Gun MODS program supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). The M2A1 Quick Change Barrel (QCB) Kit provides enhancements for the .50 Caliber M2 Heavy Barrel Machine Gun to provide the Soldier with the ability to quickly change barrels without the need to reset the headspace and timing and also reduces the visible muzzle flash. In a dismounted role, the M2/MK19 Machine Guns utilize the M205 Lightweight Tripod which reduces the Soldier burden by 16 pounds (32%) over the current M3 Tripod which weighs 50 pounds (including traverse and elevation mechanisms and pintle). The M205 Tripod provides integral traverse and elevation mechanisms for easier, more accurate target engagement and adjustable traverse limit stop for night time missions. The Mounted Machine Gun Optic (MMO) will provide increased accuracy by equipping Medium/Heavy Machine Guns, including the M2/M2A1, with a combined reflex and magnified optic to mounted Combat Support & Combat Service Support (CS/CSS) troops, who currently have no optic. The Mounted Machine Gun Optic (MMO) will significantly improve target identification, target acquisition and effective engagement time at extended ranges while retaining the capability of short range, transition fire. The MK93 is the primary mount used to interface the M2/M2A1 with all Army vehicles and ground mounts. MK93 Improvement Kits will enhance hit performance and improve Soldier interface with optical sighting systems during on the move engagement by dampening mount movement.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	6.090	-	3.612	-	3.612	-	-	-	-
Total:									
Secondary Distribution									
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	6.090	-	3.612	-	3.612	-	-	-	-

Justification:

FY 2022 funding total includes \$3.612 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh		P-1 Line Item Number / Title: 3015GB4000 / M2 50 Cal Machine Gun MODS
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: 0604601A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>FY 2022 Base procurement dollars in the amount of \$3.612 million will support the Active Army by procuring and fielding a quantity of 232 MK93 improvement kits, as well as continuing to provide engineering, new equipment training and fielding support for the M2A1 and associated accessories, to include but not limited to, M2 BOARS, M205 Tripods and Mounted Machine Gun Optics (MMO). Funding will continue fielding efforts for the M2A1 across the Army fleet of Caliber .50 Machine Guns.</p> <p>In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh	P-1 Line Item Number / Title: 3030GZ1300 / M240 Medium Machine Gun MODS
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	179.135	6.400	6.385	-	-	-	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	179.135	6.400	6.385	-	-	-	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	179.135	6.400	6.385	-	-	-	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The M240 Medium Machine Gun MODS program supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). The M240B/L Medium Machine Gun is an infantry version of the M240 Armored Machine Gun used to replace the M60 Series Machine Gun in Light Infantry, Mechanized Infantry, Armor, Rangers, Special Forces, and select Combat Engineer Units. Since the initial fielding of the M240B, various system enhancements have been identified that further improve the use of this weapon system by increasing functionality and performance capabilities, while improving training capability. These include adopting a forward rail system to mount ancillary sighting/night vision equipment, an accessory ammunition pouch, a spare barrel bag to transport and store overheated barrels, and an improved Lightweight Ground Mount. Additional enhancements include improved bipod, sling, short barrel, improved barrel, combat ammo pack, improved hydraulic buffer, drop-in mount cradle, design modifications to the Lightweight Ground Mount, collapsible buttstock and Mounted Machine Gun Optic. These enhancements are applicable to both the M240B and M240L. The M240L reduces the weight of the existing M240B by approximately 6 pounds.

The M197 Vehicle Mount is the current standard used to mount the M249 Squad Automatic Weapon and M240B to most vehicle platforms. A system improvement (drop in mount cradle) adds a link/spent case deflector and ammo handling system to provide capability upgrades addressing issues that Soldiers have identified as shortcomings of the current system. The M192 is the primary ground mount for the M240B/L and M249 machineguns. Based on recent combat experience, improvements are required to address identified shortcomings in the design and to enhance operational performance.

Fielding of the M240H Machine Gun requires replacement/upgrade of the helicopter mounts/cradles to accommodate the replacement M240H. This upgrade enhances the performance of the armament subsystems the M240H is assigned to thereby increasing the overall survivability of the aircraft platform. Improved mounts are required to be fielded to both the UH-60 and CH-47 platforms.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	-	-	-	-	-	-	-	-	-
Total Obligation Authority	6.400	6.385	-	-	-	-	-	-	-
Total:	-	-	-	-	-	-	-	-	-
Secondary Distribution	6.400	6.385	-	-	-	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh		P-1 Line Item Number / Title: 3030GZ1300 / M240 Medium Machine Gun MODS
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

Justification:

There is no FY 2022 budget request for this program.

In accordance with Section 1815 of the FY 2008 National Defense Act, (P.L.110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh	P-1 Line Item Number / Title: 3181GZ1500 / Sniper Rifles Modifications
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ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0604601A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity <i>(Units in Each)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost <i>(\$ in Millions)</i>	46.539	2.426	1.898	-	-	-	-	-	-	-	-	-
Less PY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) <i>(\$ in Millions)</i>	46.539	2.426	1.898	-	-	-	-	-	-	-	-	-
Plus CY Advance Procurement <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority <i>(\$ in Millions)</i>	46.539	2.426	1.898	-	-	-	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares <i>(\$ in Millions)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost <i>(\$ in Thousands)</i>	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The Sniper Rifles Modifications program supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). The program conducts investigative engineering studies, procure modifications or conversions of sniper weapons and related system components, Advanced Sniper Accessory Kit (ASAK) items, M151 Spotting Scope System, Tactical Tripod Kit (TTK) components, sniper optics, laser range finders, and ballistic compensating systems. Initial buys of items to support or meet operational needs and lighten sniper load. It includes the procurement of rifle scope optics, spotting scopes, an accompanying Accessory Interface Mounting kit (AIM), Improved Sniper Tripod, improved capabilities including an enhanced common reticle pattern and special tool kit.

This program also provides improved ancillary equipment such as intelligent rails, ballistic chronographs, Ballistic Weather Meter (BWM), Sniper Scope Covert Cap, Weapon Tripod Cradle, Sniper Data Board, improved Sniper Buttstock, Sniper Tool Kit, Sniper Accessory Mount, improved and/or recalibrated barrels, fire controls, muzzles with suppressors, other components, and support costs.

The current Army fleet of sniper weapons, consisting of the M14 Enhanced Battle Rifle (EBR) as interim Squad Designated Marksman weapon, the M110 Semi-Automatic Sniper System (SASS), the M2010 Enhanced Sniper Rifle (ESR), and the M107 Semi-Automatic Long Range Sniper Rifle (LRSR), require continuous upgrades to the weapon, components, and/or ancillary equipment. Sniper upgrades seek to enhance sniper mission capability, effectiveness, and survivability by extending the sniper's influence through emerging technologies in perfecting ballistics with exacting hardware and precise calculations, reducing sniper team burden through decreased weight and enhanced ergonomics, portability, signature-reduction, faster more precise target reconnaissance, surveillance, and target acquisition (RSTA) and precision aiming with automated ballistic prediction systems. Upgrades also support sniper/spotter mission collaboration with information sharing of targets and better situational awareness.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	2.426	1.898	-	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	2.426	1.898	-	-	-	-	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh		P-1 Line Item Number / Title: 3181GZ1500 / Sniper Rifles Modifications
ID Code (A=Service Ready, B=Not Service Ready): B	Program Elements for Code B Items: 0604601A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
Justification: There is no FY 2022 budget request for this funding line. In accordance with Section 1815 of the FY 2008 National Defense Act, (P.L.110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.		

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh	P-1 Line Item Number / Title: 3640GC0401 / M119 Modifications
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	388.483	6.269	2.009	-	-	-	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	388.483	6.269	2.009	-	-	-	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	388.483	6.269	2.009	-	-	-	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

The M119A3 Towed Howitzer provides direct fire support for the Infantry Brigade Combat Teams (IBCT). Funding in the M119A3 modifications budget supports the application of modernization system enhancements and includes the integration of digital fire control components previously type classified on other weapons. Other modifications to the Howitzer include items such as: Recoil System Capability Package, to enhance survivability and durability by replacing the Buffer and Recuperator and modifying the suspension; Titanium firing platforms for enhanced durability; Fire Control Computer (FCC) covers to protect the FCC from damage; FCC thumb stick/mouse to allow FCC to remain mission capable with damaged touch screen; Software upgrades to increase readiness while operating in Global Positioning System (GPS) challenged environments; Software upgrade to accurately account for the effects of Blast Over Pressure; and digital fire control system modernization upgrades to maintain readiness. Funding in this program also supports the installation and retrofit of modification kits, training devices products and program management and technical support to the M119A3 Howitzer.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	6.269	2.009	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	6.269	2.009	-	-	-	-	-	-

Justification:

There is no FY 2022 budget request for this program.

"In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities."

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh	P-1 Line Item Number / Title: 7054G02100 / Mortar Modification
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	134.798	1.693	1.689	-	-	-	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	134.798	1.693	1.689	-	-	-	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	134.798	1.693	1.689	-	-	-	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	267.988	-	-	-	-	-	-	-	-	-	-	-

Description:

Mortar System Modification provides 60mm Light Weight M224A1, 81mmLight Weight M252A1 and 120mm M120A1/M121 mortar weapon systems modification to support current and modernized mounted and dismounted platforms and enables the replacement of aging/obsolete major system components and subcomponents including Basic Issue Items (BII) kits, Additional Authorized List (AAL) items, Modified Work Order (MWO) kits, Engineering Change Proposals (ECPs), Technical Data Packages (TDP), etc. Modification efforts increase producibility, manufacturability and procurement of required assets within the United States industrial base, supporting higher firing pressures, integration of new components for system accuracy, reliability, and enables better tracking of cannon service life and addresses obsolescence and/or technical issues related to weapon system safety.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	1.693	1.689	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	1.693	1.689	-	-	-	-	-	-

Justification:

There is no FY 2022 budget request for this funding line.

This program supports modification and integration of the 60mm Light Weight M224A1, 81mmLight Weight M252A1 and 120mm M120A1/M121 mortar weapon systems and subcomponents for current and modernized mounted and dismounted platforms fielded to Infantry Brigade Combat Teams (IBCTs), Stryker Brigade Combat Teams (SBCTs), Armored Brigade Combat Teams (ABCTs) and the Special Forces Groups and Ranger Regiment, as well as addresses capability gap requirements to fulfill Multi-Domain Operations (MDO) mission requirements. This modification funding will be used to mitigate Blast Over Pressure (BOP) and Round Counter issues. This effort will benefit Soldiers by providing protection and overarching safety.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh		P-1 Line Item Number / Title: 7054G02100 / Mortar Modification
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.		

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 20: Mod of Weapons and Other Combat Veh	P-1 Line Item Number / Title: 9280GC0925 / Modifications Less Than \$5.0m (WOCV-WTCV)
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	216.061	5.187	2.604	-	-	-	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	216.061	5.187	2.604	-	-	-	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	216.061	5.187	2.604	-	-	-	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This program supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). This program procures modification of small arms through the procurement of accessory components, kits, or maintenance work orders (MWO) for weapons ranging up to 40mm caliber. This includes but is not limited to mounting systems, tripods, bipods, rails, barrels, stocks, optics, coatings and lubrications. In addition, engineering studies will investigate modification and production issues of all small arms weapons.

Secondary Distribution		FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	5.187	2.604	-	-	-	-	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-	-
	Total Obligation Authority	5.187	2.604	-	-	-	-	-	-	-

Justification:

There is no FY 2022 budget request for this program.

In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 30: Support Equipment & Facilities	P-1 Line Item Number / Title: 1862GL3200 / Items Less Than \$5.0m (WOCV-WTCV)
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ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	142.945	3.066	2.763	1.068	-	1.068	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	142.945	3.066	2.763	1.068	-	1.068	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	142.945	3.066	2.763	1.068	-	1.068	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This program supports the Army Modernization priorities (Build a More Lethal Force) through enhancement of Joint Lethality in contested environments by minimizing and eliminating erosion of close combat capability relative to peer competitors in complex terrain as outlined in the National Defense Strategy (NDS). Program provides for the procurement of standard and non-standard small arms to include auxiliary components such as combat optics, protective lens coatings for optics, fire controls, suppressors, powered/ intelligent rails, weapon mounts/platforms, and adaptors and to meet urgent needs or initial buys. Weapons and auxiliary components procured under this budget activity in prior years consist of MK48 Machine Guns, M9 Pistols and associated Basic Issue Items (BI), M500 Mossberg Shotguns, MP5KA and APC9K Submachine Guns to include magazines, clamps, holsters, slings, lanyards, spare parts and cleaning kits. Funding will also purchase Non-Standard weapons to support the Regionally Aligned Forces (RAF) as well as limited distribution weapons/accessories such as world class Olympic Grade marksmanship weapons and accessories to support the Army Marksmanship Unit (AMU) and Army National Guard to include Biathlon Teams to maintain and procure the specialized target rifles/accessories, replica M1873 ceremonial pistols for the 11th Armored Cavalry Regiment (ACR), pistols and accessories, Air Rifles for Fort Carson Police/Provost Marshal Division to assist with varmint control, standard and non-standard caliber Pistols and Rifles, Shooting glasses and scopes, Free Pistols, Shot Guns and bolt action rifles.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	-	-	-	-	-	-	-	-	-
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	3.066	2.763	1.068	-	1.068	-	-	-	-
Total:	-	-	-	-	-	-	-	-	-
Secondary Distribution	3.066	2.763	1.068	-	1.068	-	-	-	-
Quantity	-	-	-	-	-	-	-	-	-
Total Obligation Authority	3.066	2.763	1.068	-	1.068	-	-	-	-

Justification:

FY 2022 funding total includes \$1.068 million for Base, \$0 for Direct War, and \$0 for Enduring Costs in the Base Budget.

FY 2022 Base procurement dollars in the amount of \$1.068 million supports the Active Army by providing funding for the Army Marksmanship Unit (AMU) and National Guard Biathlon Teams. The AMU competes worldwide on a regular basis. Between competitions the AMU fires constantly to hone their skills and maintain their competitive edge resulting in high annual round counts. Despite the high level of maintenance provided, these weapons exceed their stated effective life projections much faster than typical fielded weapons. Requiring the weapons to be coded out and replaced regularly.

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army		Date: May 2021
Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 30: Support Equipment & Facilities		P-1 Line Item Number / Title: 1862GL3200 / Items Less Than \$5.0m (WOCV-WTCV)
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		
<p>Base funding will also provide for the procurement and training of various Non-Standard Weapons to support the regionally engaged Active Army. These weapons are required to facilitate training of US Army units on host nation weapon systems prior to deployment in support of Regionally Aligned Force (RAF) and Security Force Assistance Brigade (SFAB) missions.</p> <p>Funding will provide for the procurement of the Sub Compact Weapon (SCW) to support senior commanders and key personnel as High Risk Personnel (HRP). HRPs are authorized a Personal Security Detail (PSD), which are assigned to guard against outlined threats. The SCW addresses the operational need requirement of PSD military personnel providing weapons with greater lethality than pistols that are more concealable than rifles and engaging threat personnel with a high volume of lethal force while accurately firing at close range with minimal collateral damage. Future Army SCW requirements are being evaluated by MCoE for FORSCOM units. In addition, the base funding will procure lower receiver adapters to allow compatibility with other ARMY 9mm magazines.</p> <p>The Army will procure Biathlon Rifles for the Army National Guard Biathlon Teams and will also procure ceremonial pistols for the 11th Armored Cavalry Regiment (ACR) at the National Training Center, Ft. Irwin, California.</p> <p>In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.</p>		

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 30: Support Equipment & Facilities	P-1 Line Item Number / Title: 3270GC0050 / Production Base Support (WOCV-WTCV)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	To Complete	Total
Procurement Quantity (<i>Units in Each</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost (<i>\$ in Millions</i>)	331.277	2.651	65.658	90.819	-	90.819	-	-	-	-	-	-
Less PY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) (<i>\$ in Millions</i>)	331.277	2.651	65.658	90.819	-	90.819	-	-	-	-	-	-
Plus CY Advance Procurement (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority (<i>\$ in Millions</i>)	331.277	2.651	65.658	90.819	-	90.819	-	-	-	-	-	-

(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)

Initial Spares (<i>\$ in Millions</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Unit Cost (<i>\$ in Thousands</i>)	-	-	-	-	-	-	-	-	-	-	-	-

Description:

This program provides funding to establish, modernize, expand or replace Army-owned industrial facilities and equipment used in production and production testing of Weapons and Tracked Combat Vehicles and their components. The program also provides for the preserving, storing and disposing for facilities and equipment that are either not required for current active production or are not needed by the Army. Production Base Support occurs at Joint Manufacturing and Technology Center (JMTC) at Rock Island Arsenal, IL; Watervliet Arsenal, NY; and the Joint Systems Manufacturing Center (JSMC), also known as the Lima Army Tank Plant located in Lima, Ohio. This program also provides funding for the Arsenal 5 Year Plan(s) for modernization.

This program also provides funding to the Army Test and Evaluation Command (ATEC) to establish, modernize, expand or replace test facilities used in production testing of Weapons and Tracked Combat Vehicles and their components. It sustains Army production test capabilities through upgrade and replacement of instrumentation and equipment that is technologically and/or economically obsolete. Modernization of test instrumentation and equipment provides increased automation and efficiencies, improved data quality and quantity and cost avoidance to Army Program Managers. Programmed funding will be used to upgrade or replace production test instrumentation and equipment at Aberdeen Test Center (ATC), Aberdeen Proving Ground, MD; White Sands Test Center (WSTC), White Sands Missile Range, NM and Yuma Test Center (YTC), Yuma Proving Ground, AZ.

Secondary Distribution	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026
Army	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	2.651	65.658	90.819	-	90.819	-	-	-
Total: Secondary Distribution	Quantity	-	-	-	-	-	-	-	-
	Total Obligation Authority	2.651	65.658	90.819	-	90.819	-	-	-

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity:
 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 30: Support Equipment & Facilities **P-1 Line Item Number / Title:**
 3270GC0050 / Production Base Support (WOCV-WTCV)

ID Code (A=Service Ready, B=Not Service Ready): **Program Elements for Code B Items:** N/A **Other Related Program Elements:** N/A

Line Item MDAP/MAIS Code: N/A

Project Schedule		Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Project	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)
(Uncategorized)		-	2.651	65.658	90.819	-	90.819
	Watervliet Arsenal (WVA)	-	-	20.871	25.662	-	25.662
P-25	WVA0001 - Mortar Production Modernization	-	-	10.889	10.662	-	10.662
P-25	WVA0003 - Cannon Production Modernization	-	-	9.982	-	-	-
P-25	WVA0005 - New Paint Booth	-	-	-	15.000	-	15.000
	Joint Systems Manufacturing Center (JSMC) - Lima	-	-	20.871	46.692	-	46.692
P-25	JSMC001 - JSMC Miscellaneous Small Projects	-	-	2.276	7.485	-	7.485
P-25	JSMC002 - Advanced Welding System	-	-	1.165	-	-	-
P-25	JSMC003 - Large Plate Blast	-	-	1.344	-	-	-
P-25	JSMC004 - VMC 5-Axis (Component Machine)	-	-	2.351	-	-	-
P-25	JSMC005 - Replacement - Fume Extraction in Turret Processing Stations	-	-	4.901	-	-	-
P-25	JSMC006 - Refurb Straightening Press	-	-	2.280	-	-	-
P-25	JSMC007 - Electrical Busbar Replacement in Manufacturing Bldgs	-	-	6.554	-	-	-
P-25	JSMC008 - Remove TM004 and Install New Machine at TM005 Location	-	-	-	6.500	-	6.500
P-25	JSMC009 - Replace CE92 & CE96 Vertical Machining Centers (VMCs)	-	-	-	2.500	-	2.500
P-25	JSMC010 - Remove TR76 and TR77 and Replace with (1) Vertical Machining Center (VMC)	-	-	-	1.750	-	1.750
P-25	JSMC011 - Replace SB13 with Robotic Blast Booth	-	-	-	5.500	-	5.500
P-25	JSMC012 - RFID Asset Tracking	-	-	-	1.653	-	1.653
P-25	JSMC013 - Robotic Machine Tending Systems	-	-	-	1.000	-	1.000
P-25	JSMC014 - Repair/Refurbish/Replace Locomotive(s)	-	-	-	2.381	-	2.381
P-25	JSMC015 - Autonomous Material Handling	-	-	-	2.000	-	2.000
P-25	JSMC016 - Build 351 - Rehab South End Office Complex	-	-	-	2.000	-	2.000
P-25	JSMC017 - Water Tower Piping Renovation	-	-	-	7.540	-	7.540
P-25	JSMC018 - Replace Arch Beam Cranes - Safety Recall	-	-	-	4.121	-	4.121
P-25	JSMC020 - Building 281 Replace Drag Line	-	-	-	1.102	-	1.102
P-25	JSMC021 - Replace Cooling Tower in Power House	-	-	-	1.160	-	1.160
	Rock Island Arsenal - Joint Manufacturing and Technology Center (RIA-JTMC)	-	-	20.871	14.982	-	14.982
P-25	JMTC001 - Thick Aluminum Processing Line	-	-	20.871	-	-	-
P-25	JMTC002 - Thick Plate Machining Line Equipment	-	-	-	10.169	-	10.169
P-25	JMTC003 - Tool Room Modernization	-	-	-	0.938	-	0.938
P-25	JMTC004 - CNC Cutting Table and Spreader	-	-	-	0.375	-	0.375
P-25	JMTC004 - Bridge Mill (Thick plate machining line)	-	-	-	3.500	-	3.500
	Army Test and Evaluation Command (ATEC) Facilities	-	2.651	3.045	3.483	-	3.483
P-25	ATEC - ATEC Facilities	-	2.651	3.045	3.483	-	3.483

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Exhibit P-40, Budget Line Item Justification: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A: Procurement of W&TCV, Army / BA 02: Weapons and Other Combat Vehicles / BSA 30: Support Equipment & Facilities	P-1 Line Item Number / Title: 3270GC0050 / Production Base Support (WOCV-WTCV)
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ID Code (A=Service Ready, B=Not Service Ready):	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
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Line Item MDAP/MAIS Code: N/A

Project Schedule		Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Exhibit Type	Project	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)	Total Cost (\$ M)
Total Gross/Weapon System Cost		-	2.651	65.658	90.819	-	90.819

*For the P-17 and P-25, the Project column displays a three-level indentation: Project Category (e.g., Environmental), followed by the Facility, followed by the Project Name. Exhibits with no Project Category are included under the "Uncategorized" category. For the P-26, the Project column displays a two-level indentation: Project Type (e.g., Inactive Plants, Inactive Lines at Contractor Plants and Inactive Lines at Active Plants), followed by the Facility. Note also that although all P-17, P-25 and P-26 projects are shown in the project schedule, not all projects will have a corresponding exhibit. A P-17 or P-25 exhibit is only included if data beyond the Project Number, Project Title and Cost are included (for example: for the P-17, Description, Manufacturer, etc.; for the P-25, Narrative Explanation, Cost Elements, Principle Milestones, etc.). A P-26 exhibit is only included if data beyond Project Type and Total Cost are included (for example, Description, Contractor, Maintenance/Recurring/Environmental/Other costs, etc.).

Justification:
 FY 2022 Base procurement dollars in the amount of \$90.819 million support Army Production Base Support activities at the Watervliet Arsenal (WVA) in Watervliet, NY; the Joint Systems Manufacturing Center (JSMC) in Lima, OH; the Joint Manufacturing & Technology Center (JMTC) at Rock Island Arsenal (RIA), IL and the Army Test and Evaluation Command (ATEC) as follows:

Watervliet Arsenal (WVA), NY: \$25.662 million supports modernization of Building 125, originally constructed in the early 1900s, into a dedicated mortar factory and new paint booth at WVA, NY. This project will provide for a focused factory concept with a consolidated manufacturing line and dedicated team to support the production of all mortar systems. This project will reduce manufacturing lead time by at least 50% and provided increased throughput by 200% - 400%.

Joint Systems Manufacturing Center (JSMC), Lima, OH: \$46.698 million supports the maintenance, optimization and modernization of production processes, Industrial Base (IB) and facilities located at the Joint Systems Manufacturing Center (JSMC), Lima, Ohio.

Joint Manufacturing & Technology Center (JMTC), Rock Island Arsenal (RIA), IL: \$14.976 million supports the procurement of equipment required to increase capacity and capability of the Thick Aluminum Armor Plate Machining Line at Joint Manufacturing & Technology Center (JMTC), Rock Island Arsenal (RIA), IL.

Army Test and Evaluation Command: \$3.483 million supports:

Aberdeen Test Center (ATC) continued modernization of fire control instrumentation required to assess weapon system fire control performance on a wide range of test items. ATC will continue replacing and upgrading weapon, sight, and target scoring HD video cameras, recorders, digital video processing systems, fiber optic converters, and telemetry systems. Replacement equipment is scheduled to address obsolescence issues, software compatibility gaps, and deterioration of existing hardware while ensuring test equipment maintains pace with technological advances of test items to preclude lack of test support. ATC will also procure new instrumentation that will allow Electromagnetic Interference (EMI) testing of current and future military platforms, including autonomous vehicles.

White Sands Test Center (WSTC), ATEC will continue to maintain and upgrade existing equipment and instrumentation for the developing and evolving White Sands Missile Range (WSMR) directed energy - High-Power Microwave (HPM), Electromagnetic Pulse (EMP) and lightning effects test simulators. These items include sensors, oscilloscopes, fiber optic links, vacuum systems, cryogenic superconducting magnets, waveguides, antennas, cathodes, insulators, and various cabling and subassemblies. These effort will help WSTC meet regulatory, customer, and/or evolving mission requirements.

Yuma Test Center (YTC) will acquire upgraded sensors, sensor positioning equipment, control hardware, signal conditioners, and other data acquisition equipment and software to modernize and improve accuracy and efficiency of ballistics data acquisition.

In accordance with section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses and providing military support to civil authorities.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Mortar Production Modernization **Project Number:** WVA0001 **Project Category:**

End Item Supported Model: Mortar Production **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Watervliet Arsenal (WVA) Facility Location: Watervliet, NY Facility Type (GOGO, GOCO, COCO): GOGO						
A. Construction Cost	-	-	6.662	-	6.662	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Jun 2022 Initial/Final Project Award: Apr 2021 Construction Complete: Jan 2024 Equipment Installation Complete: May 2023 Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	6.605	1.600	-	1.600							
C. Equipment Installation Cost	-	0.700	2.400	-	2.400							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	3.584	-	-	-							
Total Project Cost	-	10.889	10.662	-	10.662							
						Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$10.662 million supports construction, as well as, procurement and installation of equipment to continue modernization of Building 125, originally constructed in the early 1900s, into a dedicated mortar factory at Watervliet Arsenal (WVA), NY. This project will provide for a focused factory concept with a consolidated manufacturing line and dedicated team to support the production of all mortar systems. This project will reduce manufacturing lead time by at least 50% and provided increased throughput by 200% - 400%.

FY 2021 Congressional Add in the amount of \$10.889 million supported the procurement and installation of equipment, as well as, specification development, design and project management to modernize Building 125 into a dedicated mortar factory at WVA, New York.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Cannon Production Modernization **Project Number:** WVA0003 **Project Category:**

End Item Supported Model: Cannon Production **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Watervliet Arsenal (WVA) Facility Location: Watervliet, NY Facility Type (GOGO, GOCO, COCO): GOGO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Apr 2021 Construction Complete: Equipment Installation Complete: Feb 2023 Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	9.307	-	-	-							
C. Equipment Installation Cost	-	0.675	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	9.982	-	-	-	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Congressional Add in the amount of \$9.982 million support the procurement and installation of equipment to modernization cannon production at Watervliet Arsenal (WVA), New York. This modernization effort will address shortfalls in manufacturing capabilities to meet Army demand for production and operation of howitzer weapon systems.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: New Paint Booth **Project Number:** WVA0005 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5): /**

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Watervliet Arsenal (WVA) Facility Location: Watervliet, NY Facility Type (GOGO, GOCO, COCO): GOGO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	15.000	-	15.000							
Total Project Cost	-	-	15.000	-	15.000	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$15.000 million support procurement of a new Paint Booth at Watervliet Arsenal (WVA), New York. The current booth is inefficient for cannon tubes and major components; the present booth can only accomodate up to (4) Extended Range Cannon Artillery (ERCA) cannon tubes or a larger number of smaller items. New Paint Booth technologies will include robotics and climate control which will enhance throughput, apply coatings to micron thickness and reduce rework. This project will also benefit other programs like Abrams and Mortars, which are painted at WVA.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: JSMC Miscellaneous Small Projects **Project Number:** JSMC001 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5): /**

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO					
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:					
B. Equipment Cost	-	2.276	7.485	-	7.485						
C. Equipment Installation Cost	-	-	-	-	-						
D. Contractor Support Cost	-	-	-	-	-						
E. Corps of Engineers Support Cost	-	-	-	-	-						
F. Other In-House Support Cost	-	-	-	-	-						
G. Total Facility Project Cost	-	-	-	-	-						
H. Other Costs	-	-	-	-	-						
Total Project Cost	-	2.276	7.485	-	7.485						
Related Projects											
	Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date				

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$7.485 million support the Abrams Tank Production Process and Abrams Industrial Base by focusing on maintaining improving, optimizing, and modernizing the manufacturing facilities. In FY 2022, there are multiple planned projects estimated to cost less than \$1.000 million each. These projects include, but are not limited to, safety and repair projects; implementation of changes from Co2 mitigation study; perimeter fence repair and clearing; replacement of crumbling concrete containment trench and other various small equipment procurements.

FY 2021 Base procurement dollars in the amount of \$2.276 million support the maintenance, optimization and modernization of production processes, Industrial Base (IB) and facilities located at the Joint Systems Manufacturing Center (JSMC), Lima, Ohio. Efforts include unspecified minor construction, replacement, rehabilitation and upgrade of facilities, Quality Work-life Environment (QWE), revitalization, preservation, installation, maintenance, protection and surveillance, and accountability of facilities critical for continued production. For example, Welder Replacements, a New Romer Arm, QWE Offices, and Update/Rebuild of W-Axis. Additionally, there are currently 28 United States Government (USG) weld machines that are out of service and the parts are obsolete. Funding supports the procurement of new machines and decommissioning the older machines to keep the weld machine inventory in proper working order.

The increase in FY 2022 is attributed to the realignment of funding from the Abrams Upgrade Program Industrial Base and Mitigation Support/Facilities Optimization and Maintenance cost element.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Advanced Welding System **Project Number:** JSMC002 **Project Category:**

End Item Supported Model: Abrams **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	1.165	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	1.165	-	-	-	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$1.165 million support procurement and installation of equipment in fabrication areas for the Advanced Welding Systems modernization project at the Joint Systems Manufacturing Center (JSMC) - Lima, OH. This project supports boom mounted weld systems for ergo/safety improvements. These systems include overhead booms that improve work area layout by having cables/leads removed from the floor. The systems reduce non-weld time activities resulted in productivity gains. These weld systems replace old assets that are either out of service or at the end of their service life.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:**
3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Large Plate Blast **Project Number:** JSMC003 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5): /**

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	1.344	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	1.344	-	-	-	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$1.344 million support the replacement of existing and aging blast system currently in use for M1 Abrams tank refurbishment, as well as, other tracked and combat vehicles. The life expectancy of shot blasting equipment is typically 15-20 years. Due to the harsh operating environment, the current system frequently experiences electrical and mechanical problems associated with deterioration. Due to the age of the current system, parts obsolescence and excess downtime have resulted in high maintenance costs. This system also lacks modern technological advancements that would improve the overall plate blasting efficiencies. The current equipment has been in service for approximately 40 years and this effort will bring the Large Plate Coating removal stripping and cleaning system to modern standards at the Joint Systems Manufacturing Center (JSMC) - Lima, OH.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: VMC 5-Axis (Component Machine) **Project Number:** JSMC004 **Project Category:**

End Item Supported Model: Abrams **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	2.351	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	2.351	-	-	-	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$2.351 million support the procurement of Virtual Machining Center(s) (VMC) equipment to support 5-axis computer controlled machining of bent or broken parts which can be milled into complex shapes and designs. CE79 and CE90 currently are at the end of their service life. CE79 was installed in 1985 and CE90 was installed in 1999. They frequently experience electrical and mechanical problems associated with deterioration. The age of these machines results in part obsolescence which then causes excess downtime and high maintenance cost. These machines also lack modern technological advancements that could improve cycle times and reduce product cost. Funding also supports the removal and disposal of two (2) existing aged out equipment and replaces it with one (1) new machining center at the Joint Systems Manufacturing Center (JSMC) - Lima, OH.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Replacement - Fume Extraction in Turret Processing Stations **Project Number:** JSMC005 **Project Category:**

End Item Supported Model: Abrams **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	4.901	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	4.901	-	-	-							
						Related Projects						
						Project Number	Title	FY & Appn	Value <i>(\$ M)</i>	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$4.901 million support the removal and disposal of an approximately 40-year old fume extraction system and the procurement and installation of modern and OSHA compliant equipment in Turret Processing Stations at the Joint Systems Manufacturing Center (JSMC) - Lima, OH and is a total replacement of the fume extraction in Building 351. Work will be completed by bay and will include all new ductwork, new fume collectors, arms, fume collectors, etc.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Refurb Straightening Press **Project Number:** JSMC006 **Project Category:**

End Item Supported Model: Abrams **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	2.280	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	2.280	-	-	-	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:

FY 2021 Base procurement dollars in the amount of \$2.280 million support procurement of equipment to replace large hydraulic straightening and machinery installed in the 1980's with modern equipment for straightening and bending process at the Joint Systems Manufacturing Center (JSMC) - Lima, OH. CE-10 straightening press was placed into service in 1985 and needs to be refurbished due to parts that are becoming obsolete and the controls systems need to be updated to incorporate newer technologies. The age of the machine and parts obsolescence causes excess downtime and high maintenance costs, as well as, currently lacks modern technological advancements that could improve accuracy and productivity.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Electrical Busbar Replacement in Manufacturing Bldgs **Project Number:** JSMC007 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	6.554	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	6.554	-	-	-	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$6.554 million support replacement and modernization of electrical busbar in two (2) manufacturing buildings. The manufacturing facilities electrical systems are high demand and have not been refurbished in approximately 30 years. The modernized systems will restore lost capability and increased electrical demand, as well as, bring electrical compliance with current electrical code at the Joint Systems Manufacturing Center (JSMC) - Lima, OH.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Remove TM004 and Install New Machine at TM005 Location **Project Number:** JSMC008 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5): /**

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	6.500	-	6.500							
Total Project Cost	-	-	6.500	-	6.500	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$6.500 million support the purchase of a modernized medium sized Horizontal Boring Mill (HBM) with rotary table at the Joint Systems Manufacturing Center (JSMC) - Lima, OH. The TM004, which was installed in 1982, is currently at the end of its useful life and parts/components are becoming obsolete. This modernized equipment will replace the existing system and provide increased capability and automation.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Replace CE92 & CE96 Vertical Machining Centers (VMCs) **Project Number:** JSMC009 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	2.500	-	2.500							
Total Project Cost	-	-	2.500	-	2.500	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement funds in the amount of \$2.500 million support the replacement of the existing Vertical Machining Centers (VMCs) with modernized systems which are more reliable, automated and have more capabilities at the Joint Systems Manufacturing Center (JSMC) - Lima, OH. The current VMCs are 15 - 20 years old and are experiencing high repair and maintenance costs.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Remove TR76 and TR77 and Replace with (1) Vertical Machining Center (VMC) **Project Number:** JSMC010 **Project Category:**

End Item Supported Model: Abrams **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	1.750	-	1.750							
Total Project Cost	-	-	1.750	-	1.750	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$1.750 million support the removal and replacement of two Virtual Machining Centers that are 22 and 25 years old and at the end of their useful life. The old VMCs experience excessive downtime, require continual repair, and have incurred high maintenance costs. The new modernized Vertical Machining Center (VMC) will be more efficient and will provide improved capabilities.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Replace SB13 with Robotic Blast Booth **Project Number:** JSMC011 **Project Category:**

End Item Supported Model: Abrams **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	5.500	-	5.500							
Total Project Cost	-	-	5.500	-	5.500	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$5.500 million support the purchase and installation of an automated robotic blast system to replace the existing manual blast system. The current equipment, installed in 2007, is near the end of its useful life and has become severely worn due to the nature of the blasting environment.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: RFID Asset Tracking **Project Number:** JSMC012 **Project Category:**

End Item Supported Model: Multiple Systems **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	1.653	-	1.653							
Total Project Cost	-	-	1.653	-	1.653	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$1.653 million supports the design and procurement of a Radio Frequency Identification (RFID) Asset Tracking system to needed to modernize the tool room infrastructure. This automated RFID tracking system is required to ensure accountability of United States Government (USG) assets throughout the Joint Systems Manufacturing Center (JSMC) - Lima, OH.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Robotic Machine Tending Systems **Project Number:** JSMC013 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
						Principal Milestones						Month & Year
A. Construction Cost	-	-	-	-	-	Concept Design Complete:						
B. Equipment Cost	-	-	-	-	-	Final Design Complete:						
C. Equipment Installation Cost	-	-	-	-	-	Initial/Final Project Award:						
D. Contractor Support Cost	-	-	-	-	-	Construction Complete:						
E. Corps of Engineers Support Cost	-	-	-	-	-	Equipment Installation Complete:						
F. Other In-House Support Cost	-	-	-	-	-	Prove Out Begins:						
G. Total Facility Project Cost	-	-	-	-	-	Prove Out Complete:						
H. Other Costs	-	-	1.000	-	1.000	Related Projects						
Total Project Cost	-	-	1.000	-	1.000							
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount \$1.000 million support the purchase of an automated Robotic Machine Tending System for load/unload of component machining centers. The use of Collaborative Robots (Cobots) increase safety and reduce injury; increase output and accuracy; and are able to operate in harsh environments.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Repair/Refurbish/Replace Locomotive(s) **Project Number:** JSMC014 **Project Category:**

End Item Supported Model: Abrams **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	2.381	-	2.381							
Total Project Cost	-	-	2.381	-	2.381	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$2.381 million support the repair, refurbishment or replacement of aging locomotives at Joint Systems Manufacturing Center (JSMC) - Lima, OH. Locomotives are used extensively to push and rearrange transport cars within the JSMC rail yard to facilitate the unloading/loading of tanks. The typical lifespan of a locomotive is 25 to 30 years and the average age of locomotives in service at JSMC is 32 years.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Autonomous Material Handling **Project Number:** JSMC015 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	2.000	-	2.000							
Total Project Cost	-	-	2.000	-	2.000	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$2.000 million support the design of space, facilities and installation of required infrastructure to support autonomous material handling and remote monitoring of automated equipment at the Joint Systems Manufacturing Center (JSMC) - Lima, OH. Autonomous material handling systems are not only more efficient, they provide increased safety, as well as, assist in providing for a cleaner environment by reducing the amount of fossil fuels used for repetitive material moves throughout the facility.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Build 351 - Rehab South End Office Complex **Project Number:** JSMC016 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5): /**

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	2.000	-	2.000							
Total Project Cost	-	-	2.000	-	2.000	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$2.000 million support modernization of the breakroom and the upstairs locker room area at the Joint Systems Manufacturing Center (JSMC) - Lima, OH. This will provide design space and facilities for remote monitoring of automated equipment.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Water Tower Piping Renovation **Project Number:** JSMC017 **Project Category:**

End Item Supported Model: JSMC Installation **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	7.540	-	7.540							
Total Project Cost	-	-	7.540	-	7.540	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$7.540 million support the required renovation and upgrade of the Water Tower Piping at the Joint Systems Manufacturing Center (JSMC) - Lima, OH. The piping around the water tower is part of the underground utilities infrastructure designed and installed decades ago. Failure repairs have increased over the past several years and the piping has reached its expected service life.

Following an inspection completed at the end of 2020, multiple items were identified to be in need of repair or replacement. This project includes but is not limited to the underground piping around the water tower plant and northeast side of Building 147; the renovation of the water piping from the water tower to the new fire pumps and fire protection system in Building 66; new fire protection piping to Building 73 (Administration/Government Offices) and approximately 30% of Building 147 (Main Production) to include areas on the west side on Building 147 where sanitary sewer and storm drains connected, which is an Environmental Protection Agency (EPA) violation.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Replace Arch Beam Cranes - Safety Recall **Project Number:** JSMC018 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5): /**

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	4.121	-	4.121							
Total Project Cost	-	-	4.121	-	4.121	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$4.081 million supports replacement of arch beam cranes at Joint Systems Manufacturing Center (JSMC) - Lima, OH. This type of crane has not been manufactured since 1962. A safety recall has been issued for these cranes, replacement parts are no longer available and the design is no longer recommended for use in "any type" of application. The welds weaken with time and could result in Martensitic Failure resulting in the bottom rail peeling away from the web plate and the potential for catastrophic load drop failure and the potential for fatal consequences.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Building 281 Replace Drag Line **Project Number:** JSMC020 **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	1.102	-	1.102							
Total Project Cost	-	-	1.102	-	1.102	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$1.102 million support the replacement of the Drag Line in Building 281 at Joint Systems Manufacturing Center (JSMC) - Lima, OH. The Drag Line in Building 281 has had numerous repairs through the years. The inner-workings (chains, gears, etc.) are worn out, at the end of life, and need to be replaced.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Replace Cooling Tower in Power House **Project Number:** JSMC021 **Project Category:**

End Item Supported Model: Abrams **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Joint Systems Manufacturing Center (JSMC) - Lima Facility Location: Lima, OH Facility Type (GOGO, GOCO, COCO): GOCO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	-	-	-							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	1.160	-	1.160							
Total Project Cost	-	-	1.160	-	1.160	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base funding in the amount of \$1.160 million supports the replacement of the cooling tower in the power house located at Joint Systems Manufacturing Center (JSMC) - Lima, OH. The galvanized steel in the cooling tower is deteriorating beyond repair and the parts required to keep the equipment sustainable are obsolete and difficult to procure.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Thick Aluminum Processing Line **Project Number:** JMTC001 **Project Category:**

End Item Supported Model: Multiple end items **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Rock Island Arsenal - Joint Manufacturing and Technology Center (RIA-JTMC) Facility Location: Rock Island, IL Facility Type (GOGO, GOCO, COCO): GOGO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	18.239	-	-	-							
C. Equipment Installation Cost	-	1.895	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	0.737	-	-	-							
Total Project Cost	-	20.871	-	-	-	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2021 Base procurement dollars in the amount of \$20.871 million support the procurement of equipment and installation costs to support automated fabrication of large metal components to include: rough milling, finish milling, automated inspection and coating processes to support production of large part components to be assembled into combat and tactical vehicle hulls at the Rock Island Arsenal Joint Manufacturing and Technology Center. Equipment to be procured includes but is not limited to: Saw Machine(s); Part Tilting Station(s); Overhead Crane(s); Part Transfer Line(s); Roughing Cell(s); Finishing Cell(s); Dipping Station(s); Paint booth(s); Cell Enclosure(s); Probing System(s); Real Time Maintenance Screen(s); High Definition Process Monitoring System and other ancillary equipment.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Thick Plate Machining Line Equipment **Project Number:** JMTC002 **Project Category:**

End Item Supported Model: AMPV, SPHS, MPF, Abrams **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Rock Island Arsenal - Joint Manufacturing and Technology Center (RIA-JTMC) Facility Location: Rock Island, IL Facility Type (GOGO, GOCO, COCO): GOGO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:						
B. Equipment Cost	-	-	8.215	-	8.215							
C. Equipment Installation Cost	-	-	0.295	-	0.295							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	1.659	-	1.659							
Total Project Cost	-	-	10.169	-	10.169	Related Projects						
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$10.169 million support the procurement of equipment required for increasing the capacity and capability of the thick aluminum armor plate machining line at Rock Island Arsenal Joint Manufacturing and Technology Center, as well as, conduct Industrial Base studies on Organic and Commercial support to the Defense Industrial base. Machined thick plate aluminum vehicle components minimizes the dependence on welding and forgings, improving quality and decreasing lead times. This processing technology will reduce the number of welds to minimize issues associated with weld quality and reduce the propensity for shock induced weld rupture, which addresses the Armored Multi-Purpose Vehicle (AMPV) Capability Development Document (CDD) requirements for System Survivability and Force Protection. In addition, unitized structure will address "idler cracking" observed during AMPV mobility testing. Decreases in weld defects and distortions in hull structure will minimize rework and production delays. 14 AMPV components have been prototyped and are ready to be manufactured using this new production capability. Equipment includes, but is not limited to, a second roughing station, a second shuttle carriage and finishing station, and will support the automated fabrication of large machined components for the production of Army vehicles.

Equipment cost details:

- 1) Second Roughing Station: This would increase the capacity of the line and remove a single point issue with the robotic machining.
- 2) Second Shuttle Carriage with additional wait stations: This would allow more flexibility in the movement of parts on the line as well as allow longer periods of un-manned operation by allowing more stations to be prepared ahead.
- 3) Second Finishing Station: This would increase the throughput of the line and further extend unmanned operation time.
- 4) Thick Plate Machining Ancillary Equipment: Fixture manufacturing capability and refined fixtures to support the milling operations.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30	P-1 Line Item Number / Title: 3270GC0050 / Production Base Support (WOCV-WTCV)
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Project Title: Tool Room Modernization	Project Number: JMTC003	Project Category:
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End Item Supported Model: AMPV, SPHS, MPF, Abrams	Annual Capacity Before / After (1-8-5): /
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Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Rock Island Arsenal - Joint Manufacturing and Technology Center (RIA-JTMC) Facility Location: Rock Island, IL Facility Type (GOGO, GOCO, COCO): GOGO							
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:							
B. Equipment Cost	-	-	0.838	-	0.838								
C. Equipment Installation Cost	-	-	0.040	-	0.040								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	0.060	-	0.060								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	-	-	-	-	-								
Total Project Cost	-	-	0.938	-	0.938								
							Related Projects						
							Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$.938 million support the procurement of equipment required for increasing the capacity and precision of the tool room at Rock Island Arsenal Joint Manufacturing and Technology Center (JMTC). Equipment includes, but is not limited to, several new small machines (grinders, measuring equipment, lathes, mills) to enable fabrication of tools and fixtures for use on all JMTC programs to include the thick plate milling line. Project enables fabrication of tools and fixtures more quickly and with higher precision.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: CNC Cutting Table and Spreader **Project Number:** JMTC004 **Project Category:**

End Item Supported Model: AMPV, SPHS, MPF, Abrams **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Rock Island Arsenal - Joint Manufacturing and Technology Center (RIA-JTMC) Facility Location: Rock Island, IL Facility Type (GOGO, GOCO, COCO): GOGO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	Related Projects					
B. Equipment Cost	-	-	0.375	-	0.375							
C. Equipment Installation Cost	-	-	-	-	-							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	-	0.375	-	0.375							
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the the amount of \$0.375 million support the procurement of equipment required for increasing the capacity and precision of pliable material and composite cutting at Rock Island Arsenal Joint Manufacturing and Technology Center. Equipment is includes Computer Numerical Control (CNC) cutting table (also known as a burner table) and spreader. Pliable material and composites are cut manually and are labor intensive with low precision. This investment provides automated cutting with speed, precision, and increased capacity.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: Bridge Mill (Thick plate machining line) **Project Number:** JMTC004 **Project Category:**

End Item Supported Model: AMPV, SPHS, MPF, Abrams **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Rock Island Arsenal - Joint Manufacturing and Technology Center (RIA-JTMC) Facility Location: Rock Island, IL Facility Type (GOGO, GOCO, COCO): GOGO						
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:	Related Projects					
B. Equipment Cost	-	-	3.300	-	3.300							
C. Equipment Installation Cost	-	-	0.200	-	0.200							
D. Contractor Support Cost	-	-	-	-	-							
E. Corps of Engineers Support Cost	-	-	-	-	-							
F. Other In-House Support Cost	-	-	-	-	-							
G. Total Facility Project Cost	-	-	-	-	-							
H. Other Costs	-	-	-	-	-							
Total Project Cost	-	-	3.500	-	3.500							
						Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$3.500 million support the procurement of equipment required for increasing the capacity and capability of the thick aluminum armor plate machining line at Rock Island Arsenal Joint Manufacturing and Technology Center. Equipment includes, but is not limited to, a bridge mill to allow machining of larger parts and steel components to support the automated fabrication of large machined components for the production of Army vehicles. This investment will increase the capability by allowing machining of larger parts and allow machining of steel components and the fixtures from the line would increase capacity since it would be able to be used as a second finishing station if workload required.

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Exhibit P-25, Production Support and Industrial Facilities Cost Analysis: PB 2022 Army **Date:** May 2021

Appropriation / Budget Activity / Budget Sub Activity: 2033A / 02 / 30 **P-1 Line Item Number / Title:** 3270GC0050 / Production Base Support (WOCV-WTCV)

Project Title: ATEC Facilities **Project Number:** ATEC **Project Category:**

End Item Supported Model: **Annual Capacity Before / After (1-8-5):** /

Cost Elements <i>(\$ in Millions)</i>	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Facility Name: Army Test and Evaluation Command (ATEC) Facilities Facility Location: Various Facility Type (GOGO, GOCO, COCO):							
A. Construction Cost	-	-	-	-	-	Principal Milestones Month & Year Concept Design Complete: Final Design Complete: Initial/Final Project Award: Construction Complete: Equipment Installation Complete: Prove Out Begins: Prove Out Complete:							
B. Equipment Cost	-	-	-	-	-								
C. Equipment Installation Cost	-	-	-	-	-								
D. Contractor Support Cost	-	-	-	-	-								
E. Corps of Engineers Support Cost	-	-	-	-	-								
F. Other In-House Support Cost	-	-	-	-	-								
G. Total Facility Project Cost	-	-	-	-	-								
H. Other Costs	2.651	3.045	3.483	-	3.483								
Total Project Cost	2.651	3.045	3.483	-	3.483	Related Projects							
							Project Number	Title	FY & Appn	Value (\$ M)	Facing	Start Date	Compl Date

Narrative Explanation:
 FY 2022 Base procurement dollars in the amount of \$3.483 million support the Army Test and Evaluation Command priorities at the following locations:

- Aberdeen Test Center (ATC) will continue to modernize fire control instrumentation required to assess weapon system fire control performance on a wide range of test items. ATC will continue replacing and upgrading weapon, sight, and target scoring HD video cameras, recorders, digital video processing systems, fiber optic converters, and telemetry systems. Replacement equipment is scheduled to address obsolescence issues, software compatibility gaps, and deterioration of existing hardware while ensuring test equipment maintains pace with technological advances of test items to preclude lack of test support. ATC will also procure new instrumentation that will allow Electromagnetic Interference (EMI) testing of current and future military platforms, including autonomous vehicles.
- White Sands Test Center (WSTC) will continue to maintain and upgrade existing equipment and instrumentation for the developing and evolving White Sands Missile Range (WSMR) directed energy - High-Power Microwave (HPM), Electromagnetic Pulse (EMP) and lightning effects test simulators. These items include sensors, oscilloscopes, fiber optic links, vacuum systems, cryogenic superconducting magnets, waveguides, antennas, cathodes, insulators, and various cabling and subassemblies. These effort will help WSTC meet regulatory, customer, and/or evolving mission requirements.
- Yuma Test Center (YTC) will acquire upgraded sensors, sensor positioning equipment, control hardware, signal conditioners, and other data acquisition equipment and software to modernize and improve accuracy and efficiency of ballistics data acquisition.