



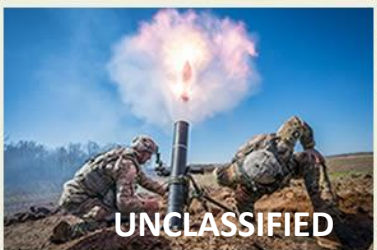
JOINT PROGRAM EXECUTIVE OFFICE ARMAMENTS & AMMUNITION



Presented to:
**Munitions Executive Summit
Acquisition Panel**

Presented by:
**Mr. Chris Grassano
Deputy Program Executive Officer
Armaments & Ammunition**

20 October 2021



Joint Program Executive Office Armaments & Ammunition



COL Anthony Gibbs

Project Manager Combat Ammunition Systems Indirect Fire Munitions and Mortar Weapon Systems

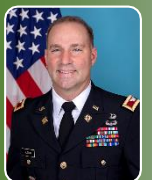
- Long Range Precision Fires
- Cannon Delivered Area Effects Munitions
- Mortar Weapon Systems



COL Russell Hoff

Project Manager Close Combat Systems Terrain Shaping Obstacles, Close Combat Munitions, Protection and Support Systems

- Interim Top Attack Munition
- Individual Shoulder Launched Munition
- Countermeasure Flares/Decoys



COL Paul Alessio

Project Manager Maneuver Ammunition Systems

- Direct Fire Munitions
- Small, Medium and Large Caliber
 - Special Ammo & Weapon Systems



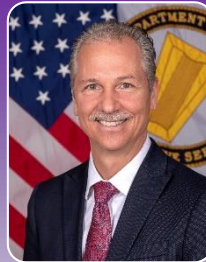
Mr. Matthew Zimmerman

Project Director Joint Services

- Ammunition Industrial Base
- SMCA Integration
- Demilitarization
- Ammunition Logistics R&D
- Technology and Prototyping



JPEO A&A
BG Bill Boruff



DJPEO A&A
Mr. Chris Grassano SES

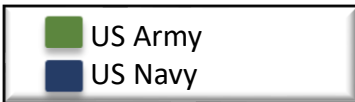


APEO
International
Mr. Thomas
Coradeschi



Dir Talent
Management
Mr. Keith Gooding

Mission:
Develop, procure and field lethal armaments and ammunition providing Joint Warfighters and Allied Partners overmatch capabilities.



Mr. John Curran

Chief of Staff

- Human Resources
- Security / Foreign Disclosure
- Acquisition Processes
- Audit Readiness
- Business Management
- Information Technology



Mr. Chris Hatch

Acting Program Manager Towed Artillery Systems

Joint Artillery & Survey

- M777A2 Lightweight 155mm Howitzer
- M119A3 105mm Howitzer
- Target Acquisition
- Mobile Howitzer



CAPT Brian Schorn USN

Project Director Joint Bombs

- Air Force and Navy Bombs
- Navy Deck Gun Ammo
- Energetics / Cartridge Actuated Device / Propellant Actuated Device



Mr. Eugene Conner

Director for Integration

- Science and Technology
- Systems Integration
- Architectures and Standards

Single Manager for Conventional Ammunition



Key Development Thrusts

- Critical armaments and ammunition proactively “pulling” lethal technologies and system-of-systems capabilities from Army S&T developers like CCDC-AC, including ...
 - **Extended Range Cannon Artillery** (Munitions, Weapons, Super Charge, Extended Range alternatives, Precision)
 - **Cannon-Delivered Area Effect Munitions** (anti-armor and DPICM Replacement)
 - **Mobile Wheeled Howitzer**
 - **6.8mm Ammunition for the Next Generation Squad Weapon**
 - **Terrain Shaping Obstacles**
- Leading effort to ensure Assured Position, Navigation, and Timing (A-PNT) Precision and Conventional Fires in GPS Degraded/Denied environments
 - **Assured Precision Weapons and Munitions** (including A-PNT, M-Code GPS, Network Assisted A-PNT (NA2), AltNav and non-GPS solutions)

**JPEO A&A is fully engaged to develop, deliver,
and ensure Combat Overmatch**



JPEO A&A's Digital Engineering Transformation



Transformation Drivers



PRESENT STATE:

“**Excepted**” use of 3D Models & MBSE tools (i.e. “Islands of Excellence”)

2D TDPs used in CTR solicitations/evals

Build/Test/Build Prototypes - **\$\$\$\$**

Time/labor intensive methods to address user reqmt changes & CTR RFDs/waivers

“Hi-Touch” **Industrial-Age** Mfg processes & Ammo Surveillance methods

Disparate/isolated data mgt systems & repositories

New Policies
Culture
Training
Infrastructure
Pilots/Demos

FUTURE STATE:

“**Accepted**” use of 3D Models & MBSE tools across all phases of the L/C

3D TDPs: Enables “As-Designed” vs “As-Built” CTR proposal evals & improved “clean-sheeting”

Virtual Testing of Digital Models -**\$\$**

“**Digital Thread**” enables faster & more complete eval of reqmt changes & waivers

Digital Mfg & Predictive Ammo Surveillance enabled by **AI/ML/IoT**

Cloud computing & collaborative work env based on **Authoritative Source of Truth (ASOT)**



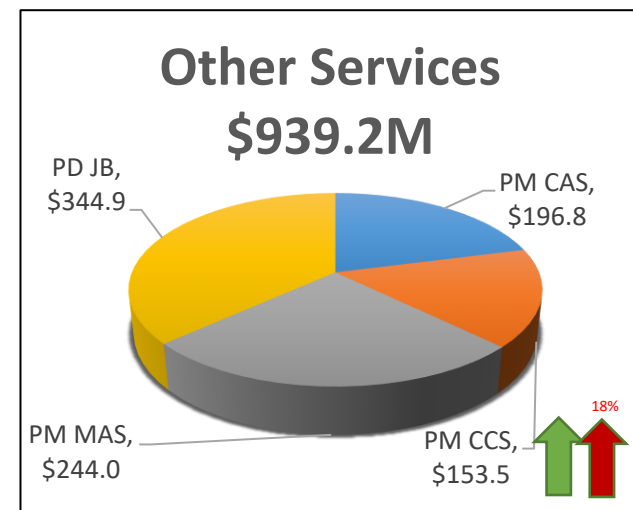
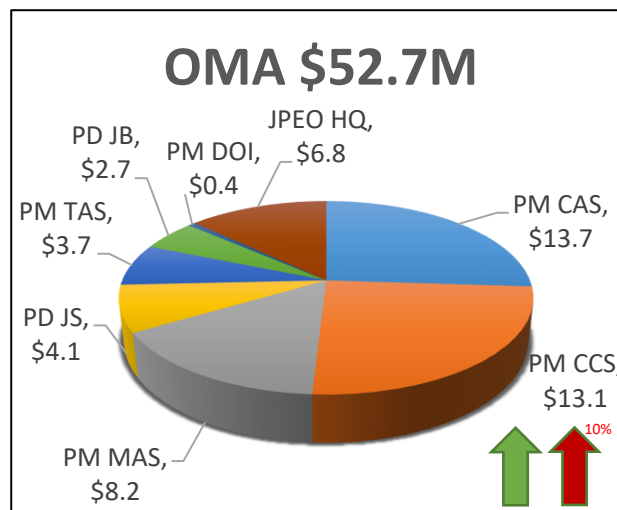
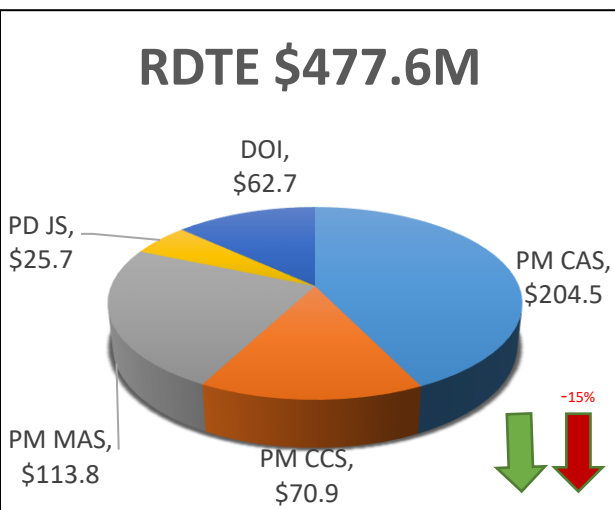
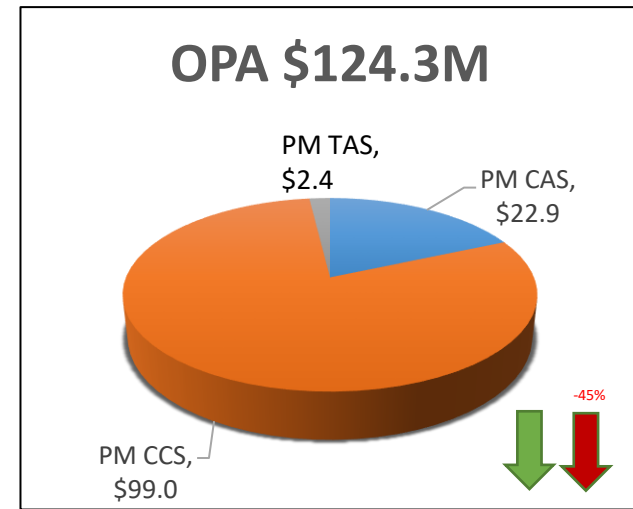
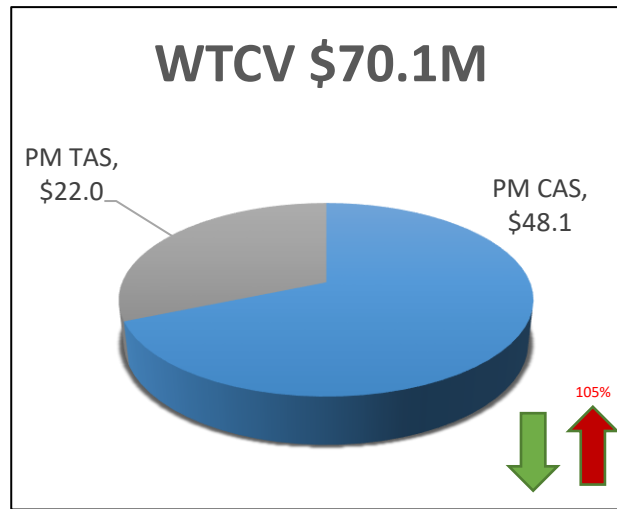
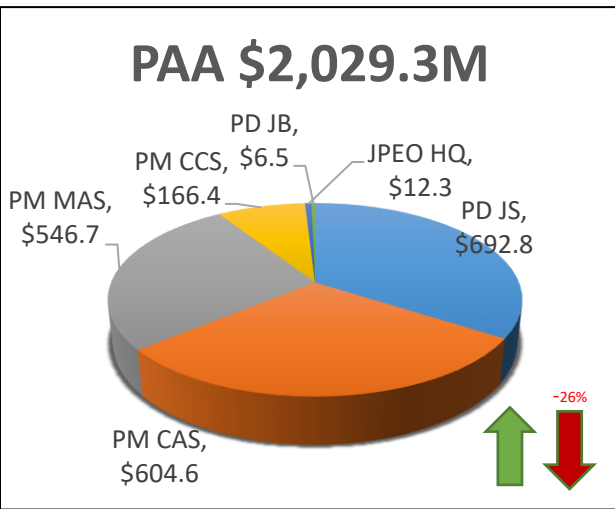
Eight Cross Functional Teams (CFTs) Support Army Modernization Priorities

<p>1</p> <p>Long Range Precision Fires</p> <p>Supported by 12 Projects, Includes:</p> <ul style="list-style-type: none"> • Enhanced Lethality • Cannon Munitions • 155mm HE Rocket Assist • Extended Range • Cannon Delivered Area Effects Munitions 	<p>2</p> <p>Next Generation Combat Vehicle</p> <p>Supported by 7 Projects, Includes:</p> <ul style="list-style-type: none"> • Enhanced Lethality Medium Cal Ammo • 120mm Extended Line of Sight (ELOS) • 105mm Mobile Protected Firepower 	<p>3</p> <p>Future Vertical Lift</p> <p>Supported by 2 Project:</p> <ul style="list-style-type: none"> • Aviation Expendable Countermeasures • Enhanced Lethality Medium Cal Ammo 	<p>4</p> <p>Network / C31</p> <p>Not Currently Supporting</p>	<p>5</p> <p>Air and Missile Defense</p> <p>Supported by 2 Project:</p> <ul style="list-style-type: none"> • 30x113mm CUAS Munitions • 20mm M940 Enhancement JUONS 	<p>6</p> <p>Soldier Lethality</p> <p>Supported by 9 Projects, Includes:</p> <ul style="list-style-type: none"> • 40mm HV High Explosive Dual Purpose Air Burst • 40mm Low Velocity HE Air Burst • Next Generation Ammunition 	<p>7</p> <p>APNT Supported by 1 Project:</p> <ul style="list-style-type: none"> • Assured Precision Weapons and Munitions 	<p>8</p> <p>Synthetic Training Environment</p> <p>Not Currently Supporting</p>
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The JPEO Directly Supports Six of Eight CFTs



JPEO Armaments & Ammunition FY22 President's Budget



Future Trend

Total FY 22 Budget ~\$3.7B

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Trend from FY21 (%)

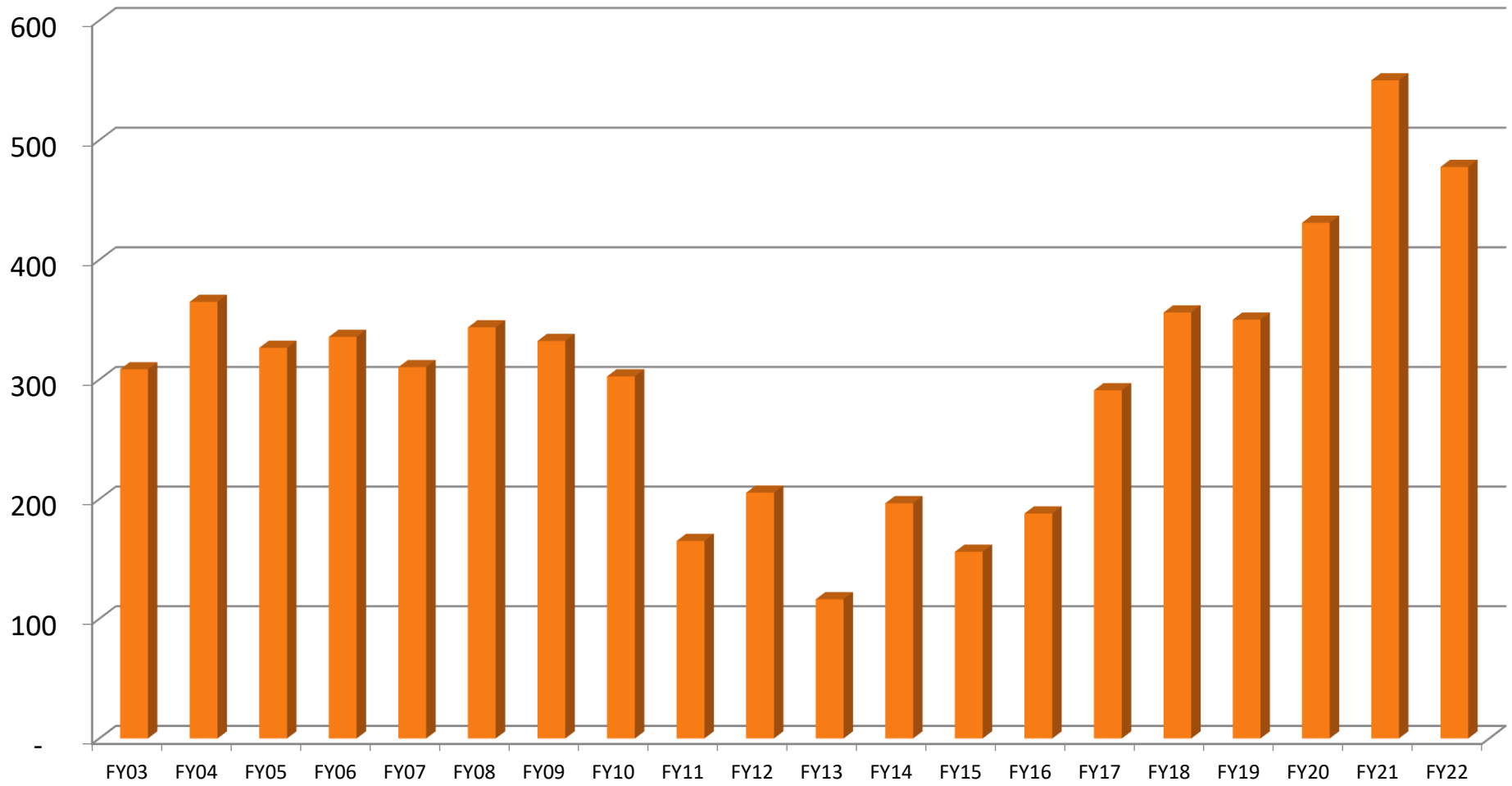


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RDTE Appropriation

\$ in M



RDTE

Sources: FY03-20 (Actual \$'s Received)
FY21 Appropriated
FY22 (PB22LOCK)

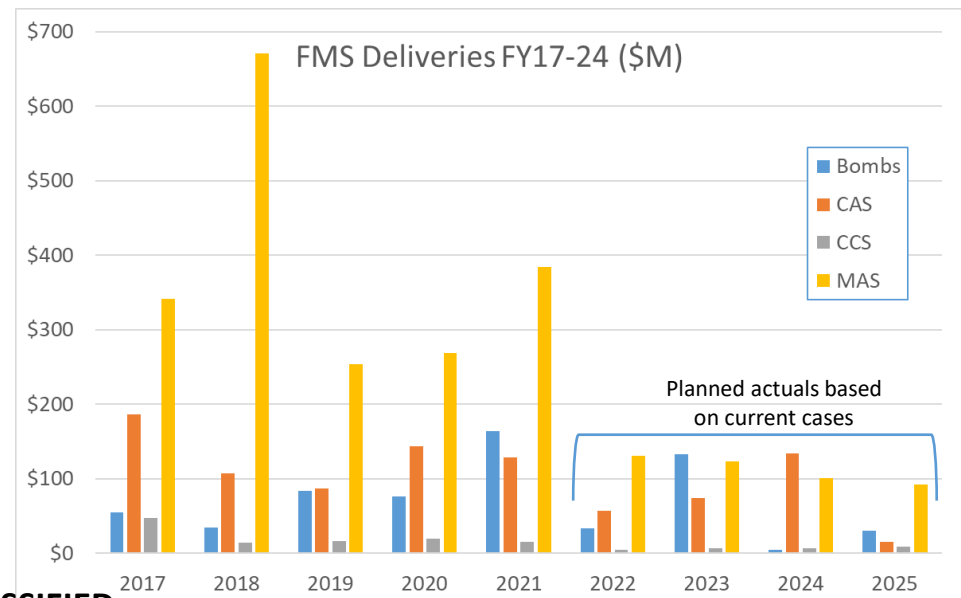
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Developing & Maintaining Strategic Partnerships

- DoD Strategy is to encourage and enable partner nation security goals consistent with our national security objectives
- Key elements:
 - Foreign Military Sales
 - Cooperative R&D/Production
 - Foreign Comparative Test
 - Direct Commercial Sales

FMS – 66 countries
 MOU – 12 countries
 FCT – 5 countries





UNCLASSIFIED

Message to Industry



- We will continue the use of OTA where appropriate
- Focus on affordability
- Need for timely and compliant proposals
- Decline in ammunition budget – it's coming
- Move to more products / services made in America
- Thank you for your continued support

UNCLASSIFIED



JOINT PROGRAM EXECUTIVE OFFICE ARMAMENTS & AMMUNITION

Project Director Joint Bombs 2021 Munitions Executive Summit

PM Acquisition Panel
20 October 2021

CAPT Brian Schorn, USN
Project Director Joint Bombs
973-724-6487
brian.g.schorn.mil@army.mil





Project Director Joint Bombs

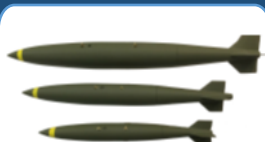


Production

0 – 5 Years FUE

5 + Years FUE

Current Products



General Purpose Bombs



Penetrator Bombs



Cast Ductile Iron Bombs



Small Practice Bombs



Energetics
(Bulk High Explosives)



Bomb Fins



DSU-33
Proximity Sensor
(GP Bombs)



Army Aviation
CAD PAD

New Products

- Improved General Purpose and Penetrator Bombs

BLU-129



BLU-134
500 lb. CDI Live



BLU-137
Penetrator
Bomb



BLU-136



BLU-140
500 lb. Penetrator Bomb



~40 Active Programs

**FY20 = \$344.1M
FY21 = \$224.8M**

**Total Products
Delivered in FY20:
307,000 End Items**

Future Products

- Other Services retain configuration management of items



**MK187 5' 54 Cal
With Multi
Function Fuze
(MFF)**



**MK 200
Propelling
Charge**

Source: Actual \$ Received

Manage SMCA acquisition of other Military Service configured munitions



Main Priorities



- Award new contracts for:
 - Nose Cone/Support Cup
 - Small Practice Bombs (BDU-33 & MK76)
 - Signal Cartridge (MK4-3)
- Complete First Article Testing and enter into production of:
 - MK 82 Tritonal LAP at MCAAP
 - MK 81 Tritonal bomb bodies at GD and LAP at MCAAP
 - M70 Series Cables
- Continue production of:
 - Tritonal filled MK84 2,000 lb General Purpose Bombs
 - General Purpose Bombs (all variants)
 - BLU-109 2,000 lb Penetrator Bombs
 - BDU-50 500 lb Cast Ductile Iron Bombs
 - MK 76 Small Practice Bombs
 - BSU-33 Conical Bomb Fins
 - MK84 Conical Bomb Fins
 - Bomb Suspension Lugs
 - MK3 & MK12 Pallets





Industrial Base Challenges



- Bombs requirements have declined after unprecedented highs; need to continue close collaboration with industry and requiring Services to maintain commercial industrial base viability
- Still need flexibility in both contracts and production facilities to absorb fluctuations in customer funding and continue to ask for your support as appropriate
- Maintain Industrial Base capabilities by keeping commercial facilities warm when requirements decrease with reduced production rates
- Government & contractors fully assess our supply chains (i.e., Single Point Failures and foreign sources of supply)
- Lead times for certain RDX-based explosives are still long but significantly shorter than before



Current Explosive Environment

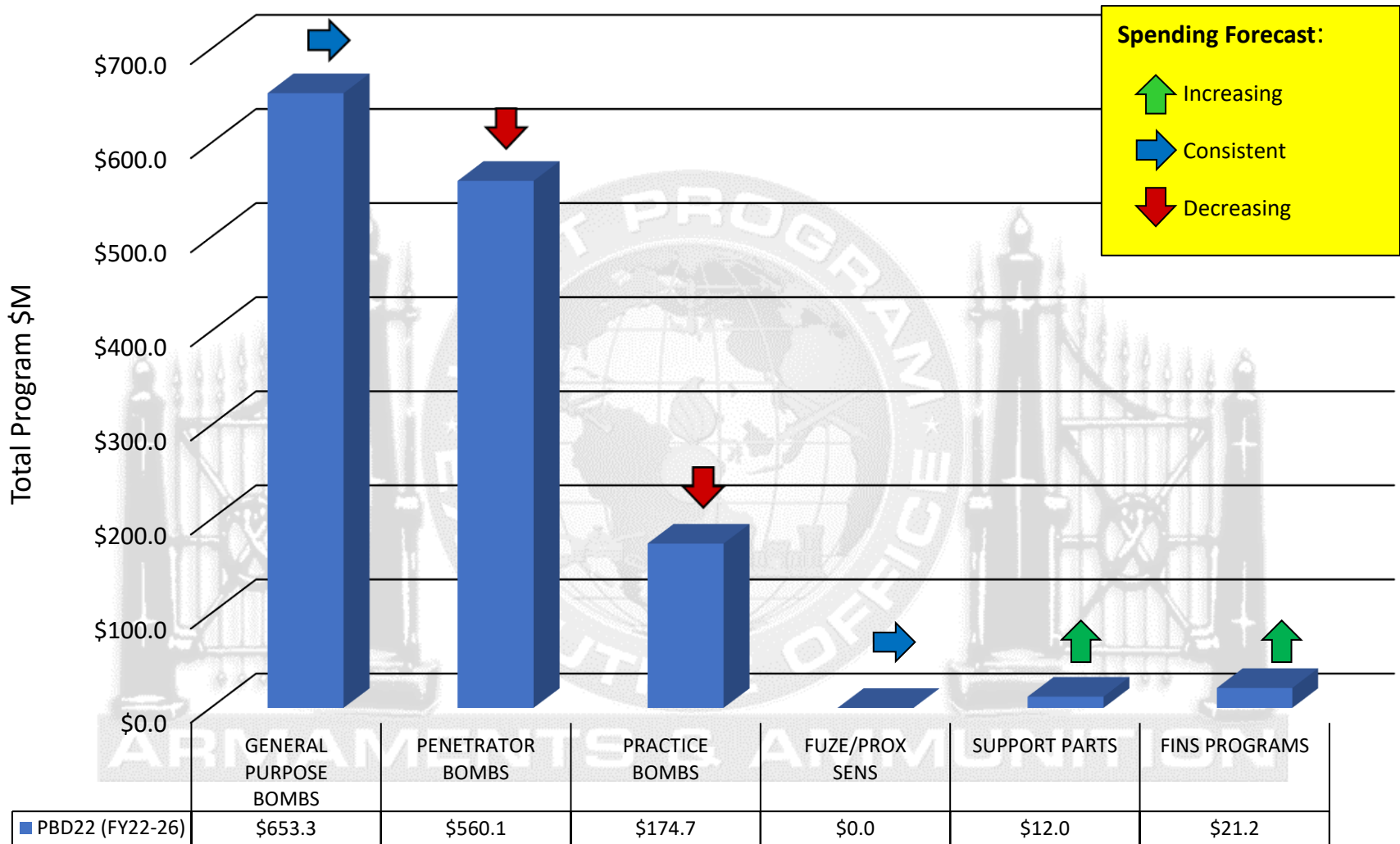


- Community is still concerned about HSAAP capacity – valid concern
- The SMCA does not allocate or apportion capacity to meet any specific Service need
- Requirements placed on contract are scheduled as first-come, first-served
- Explosives prioritization process implemented as of 11 Apr 18, fbo.gov solicitation number: EXPLOSIVESPRIORITYHSAAP

For Explosive Prioritization Concerns:
usarmy.pica.peo-ammo.mbx.hsaap-prioritization@mail.mil
usarmy.pica.peo-ammo.mbx.hsaap-prioritization@army.mil
(email migration ongoing, “@mail.mil” obsolete after March 2022)



Funding Outlook



Represents Other Service Funding (Air Force and Navy) \$M

PBD22: Total Portfolio ~\$1.4B



Competitive Opportunities



Product	Projected RFP Release	Projected Award Date	Dollar Amount	Contract Strategy	Contract Type
CXU-3 Cold Signal Cartridge for Small Practice Bombs	4QFY21	3QFY22	\$6.2M	SBSA	5 Year IDIQ
BSU-33 Fin Assembly	2QFY22	1QFY23	TBD	SBSA	5 Year IDIQ
MK84 Fin Assembly	2QFY22	1QFY23	TBD	SBSA	5 Year IDIQ
BLU-129 500lb Low Collateral Bomb	2QFY22	2QFY23	\$85.3M	Competitive	5 Year IDIQ
BLU-109 A/B Penetrator Bomb	2QFY22	2QFY23	\$27.0M	Competitive	5 Year IDIQ
TNT/Aluminum Powder	2QFY22	2QFY23	TBD	TBD	5 Year IDIQ
MS3314 & MK3 Bomb Suspension Lugs	3QFY22	2QFY23	TBD	SBSA	5 Year IDIQ



Closing Message to Industry



- Thank you for your sustained commitment and support to the Ammunition Enterprise and the Joint Warfighter
- General Purpose and Penetrator bomb requirements have come down from a high; the government/industry team need to work together to effectively negotiate the downturn
- Energetics consumers - please plan early and make no assumptions
Prioritize, Plan, Prepare:
 - ✓ Prioritize internal requirements through active coordination with your PM customers and subcontractors
 - ✓ Plan for award of explosive requirements and provide funding in support of those awards as early as practical
 - ✓ Prepare for extended explosive lead times

2021 Munitions Executive Summit PM Acquisition Panel

20 October 2021

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Mr. Joseph Pelino
Deputy Project Manager
(973) 724-3457
joseph.pelino.civ@mail.mil



PM CCS Portfolio



ON EVERY MISSION

Protection System



AN/PSS-14C Hand Held Mine Detector



SS-ADT



Taser



Acoustic Hailing Device

Shoulder Launched Munitions



Bunker Defeat Munition



AT4 & AT4CS



XM919 Individual Assault Munition

Grenades



M67 Fragmentation Hand Grenade



M111 Offensive Hand Grenade



M228 Practice Fuze



M106 SOD-V_R



Smoke Grenades

Terrain Shaping Obstacle



XM204 Top Attack



Close Terrain Shaping Obstacle, Inc 1



XM343 Standoff Activated Volcano Obstacle (SAVO)



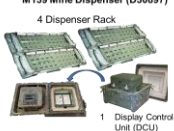
Volcano Recapitalization



Remote Control System



Obstacle Planning Tool



M139 Mine Dispenser (D30897)

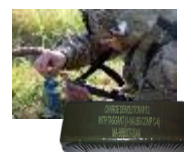


M548 Mounting Kit (M18293)

Demolitions



SLAM



Claymore



RF-Remote Activation System



Shaped Charge



Sheet Explosive



Det Cord



C-4 Block

Pyrotechnics



Signals



Simulators



Countermeasure Flares

EOD



Explosive Ordnance Response Kit



Smart Ray Vision (SRV)

Render Safe – Sets, Kits and Outfits (RS-SKO)



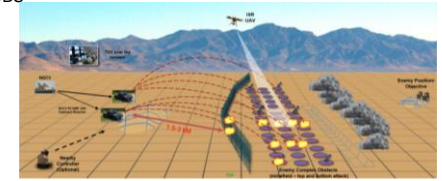
Breaching Systems



APOBS



MICLIC



Next Generation Explosive Breacher

60 YEARS of ACQUISITION EXCELLENCE

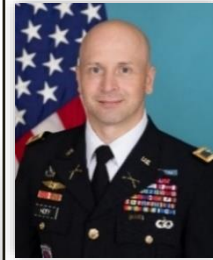
(CUI) Team PM CCS



ON EVERY MISSION

Provide dominant and innovative lethal and protective capabilities for the Joint Warfighter through acquisition excellence

ON EVERY MISSION



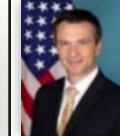
Project Manager
COL Russell Hoff



Deputy PM
Joe Pelino



Business Division Manager
Anita Polesky



Chief, Product Support
Fred Willecke



Director, Program Integration & International Division
Michael O'Grady (Actg)



Manager, Technology Management Division
John Esposito

Product Manager
Terrain Shaping Obstacles



Product Manager
LTC Isaac Cuthbertson



Deputy PdM
Ken Heider

Asst Product Manager(s)
CPT (P) Macias (Inbound)

Branch Chiefs
Spider & SAVO: Sean Stevens
TSO: Eli Vainchenker

Product Director
Combat Armaments & Protection Systems



Product Director
David Millette



Deputy PD
Don Palathinkal

Asst Product Manager
MAJ Pfromm (Inbound)
G&PS Branch Chief
Tinesha Nicholas

Team Leads
Shoulder Launched: Phillip Lawson
Grenades: Anthony Sacco (Actg)
Protection Systems: Derek DeReiter

Product Director
Demolitions & Countermeasures



Product Director
Michael Burke (Actg)



Deputy PD
Hugh MacMillan (Actg)

Asst Product Manager
CPT Fite (Inbound)

Branch Chiefs
Pyrotechnics: Harvard Yuen
Demolitions: Tim Healy

60 YEARS of ACQUISITION EXCELLENCE

Team CCS Priorities



**ON EVERY
MISSION**

- **Readiness, support to the Joint Warfighter & deliver improved capabilities**
- **Extreme Cold Weather Operations**
- **Cross Functional Team Alignment**
- **Sustain technological superiority through a quality workforce & innovation**
- **Enhance industry to government relationship**
- **Stewardship in everything we do**
- **Increase international program participation**

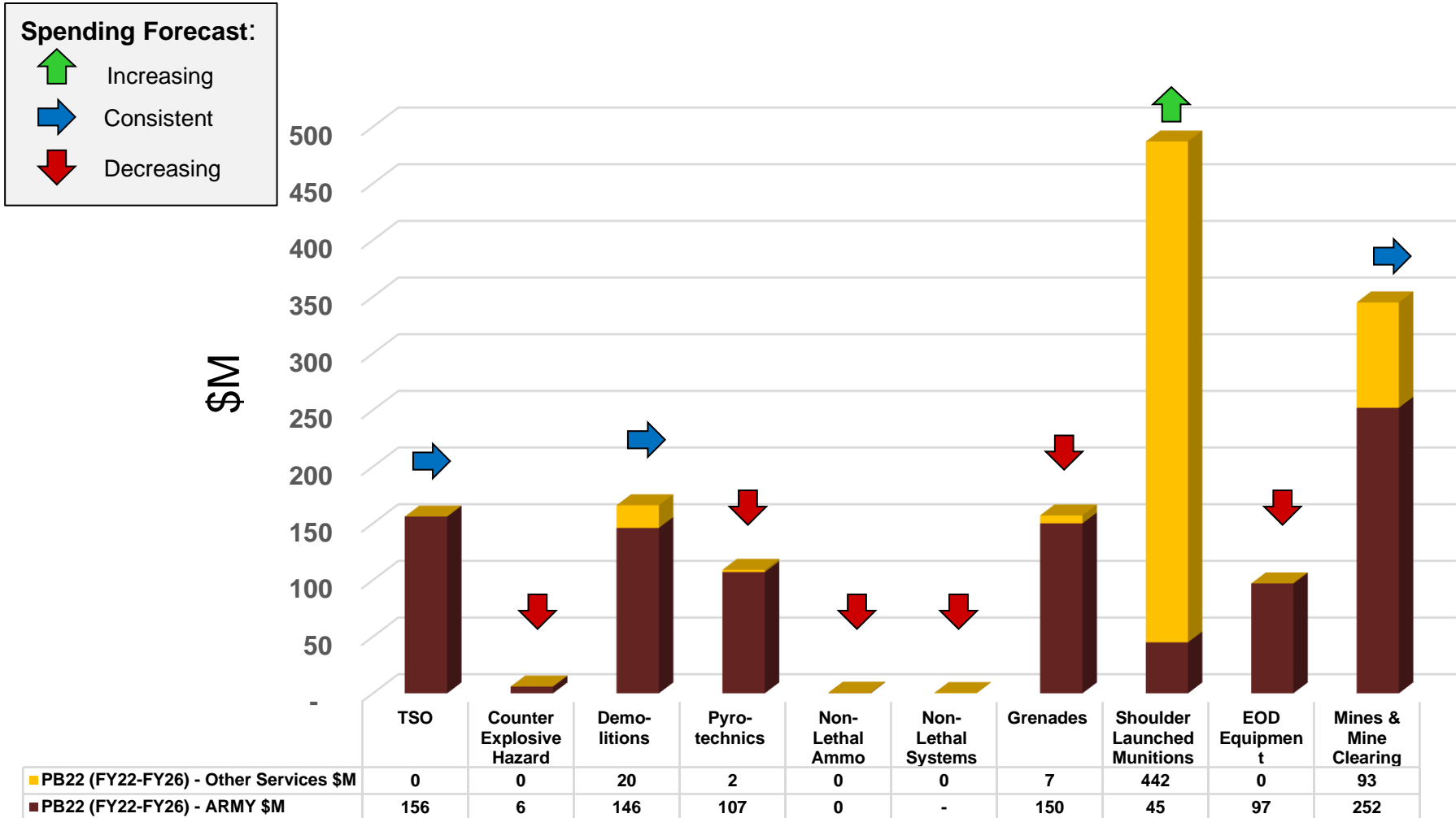


60 YEARS of ACQUISITION EXCELLENCE

PM CCS PB22 Budget Outlook (FY22-FY26)



ON **EVERY**
MISSION



60 YEARS of ACQUISITION EXCELLENCE

FY22 Competitive Opportunities



ON EVERY MISSION

60 YEARS of ACQUISITION EXCELLENCE

FY22				
Program/ Item/ Description	Planned FY22 Dollars (\$M)	Planned Strategy	Contract Type	Anticipated Final RFP Release Date (QtrFY)
Close Terrain Shaping Obstacle (CTSO)- Inc 1 – Top Attack	\$10.3	C	Stand Alone OTA	1QFY22
M18A1 Claymore	\$9.9	C	IDIQ/FFP	1QFY22
DWEN MK160 & DWEL MK158 Delay Detonator	\$0.50	C	IDIQ/FFP	1QFY22
M456 Detonating Cord	\$ 4.70	C	IDIQ/FFP	1QFY22
Family of Sheet Explosives	\$7.00	C	IDIQ/FFP	1QFY22
M81 Igniter MN08	\$2.40	SBSA	IDIQ/FFP	1QFY22
M88 Volcano Canister	\$8.73	C	IDIQ/FFP	1QFY22
M34/M35 Simulators	\$1.70	C	IDIQ/FFP	2QFY22
XM919 Individual Assault Munition (IAM)	\$23M	C	IDIQ/FFP	2Q/FY22

Contract Strategy:

C- Competitive
 SBSA - Small Bus Set-Aside
 NTIB - National Technology & Industrial Base

Contract Type:

DLA- Defense Logistics Agency
 FFP -Firm Fixed Price
 IDIQ - Indefinite Delivery/ Indefinite Quantity
 DOTC - DoD Ordnance Technology Consortium
 CPFF - Cost-Plus-Fixed-Fee

Challenges Requiring Industry Partner Help



ON EVERY MISSION

Industrial Base

- Assured Munitions
 - Supply Chain Risk Management (Constituent level)
 - Electronic Component Obsolescence
- Facility Cybersecurity Requirements
- Modernize Production Methods
- Automated Non-Destructive Inspection (i.e., X-Ray) and Required Certified Personnel

Technology Base

- Novel Surface-to-Air Missile Countermeasure solutions
- Breaching Technologies
- Novel Energetic Formulations
- Advanced Fuze Design
- Improved Munition Power Sources
- Advanced Manufacturing
- Warheads



- **Number of RDT&E efforts transitioning to production in the FY22-24 timeframe**
- **We need to do better at modernizing legacy designs**
 - Role for both Contractor and PM
 - Leveraging other resources to modernize portfolio
- **Budgets appear to be lean - Opportunity still exists across the portfolio**
- **We can help you invest your IRAD**
- **Know your supply chain & remain vigilant in keeping them healthy**
- **Push, Push, Push, FMS & DCS – PM CCS support**

PROJECT MANAGER COMBAT AMMUNITION SYSTEMS

Munitions Executive Summit

20-21 October 2021

Presented by:

COL Anthony R. Gibbs

Project Manager for Combat Ammunition Systems

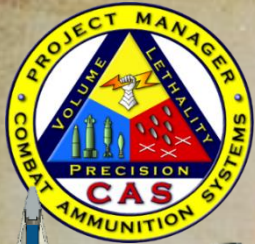
anthony.r.gibbs6.mil@mail.mil

973 724-2003



FORGING THE FUTURE OF INDIRECT FIRE

PM CAS Family of Products

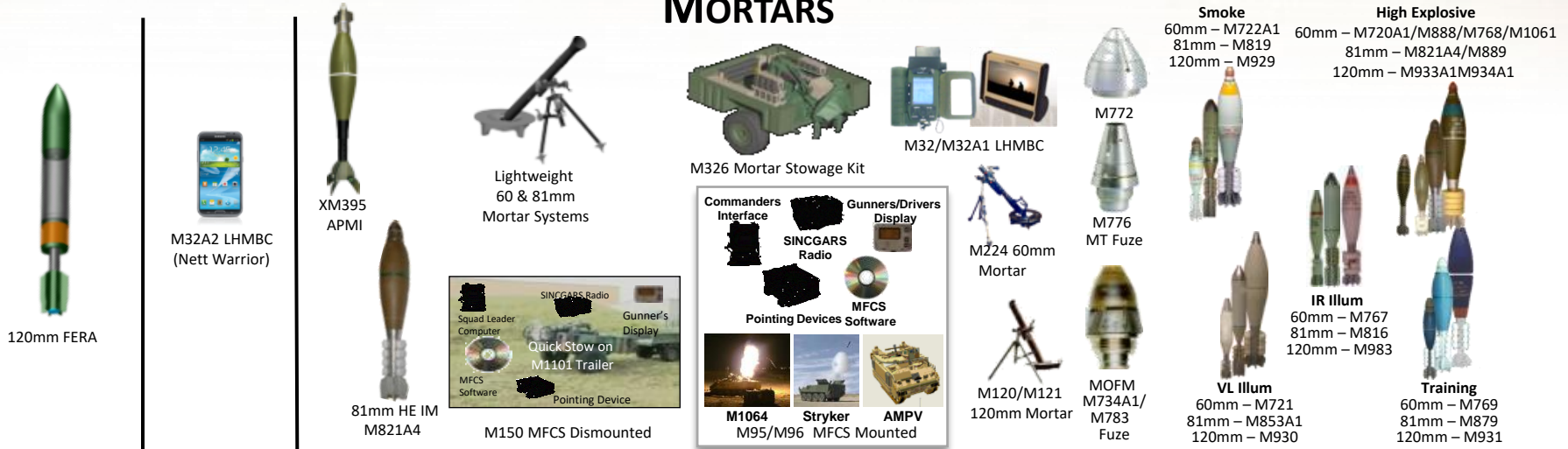


ARTILLERY



Concept Development Production/Sustainment

MORTARS



Concept Development Production/Sustainment



PM CAS Priorities

- Deliver Ammunition & Weapon Systems to meet or exceed Customer Required Delivery Dates
 - ✓ Execute increased deliveries of critical munitions
 - ✓ Continued emphasis on Safety and Quality
 - ✓ Field Excalibur Shaped Trajectory capability and BONUS
- Develop Long Range Precision Effects
 - ✓ Build/Test/Qualify XM1113 and XM1128 with Precision Guidance Kit (PGK)
 - ✓ Build/Test/Qualify XM1113ER (XM1210) with LR-PGK and PGK-ER
 - ✓ Design/Build/Test new family of 155mm propellant for ERCA
 - ✓ Qualify/Deliver Cannon-Delivered Area Effects Munition (C-DAEM) Armor solution
 - ✓ Extended Range Cannon (ERCA) Excalibur qualification
- Enable and Fulfill International Requirements to Strengthen Partnerships and Alliances
 - ✓ Interoperability demonstrations on foreign platforms (Caesar, K9, AS90, PzH2000)
 - ✓ 155mm Joint Ballistics Memorandum of Understanding
 - ✓ Foreign Military Sales/Direct Commercial Sales
 - ✓ Execute Co-development Project Agreements to meet shared objectives





Industrial Base Feedback

➤ COVID 19 Impacts

- ✓ Supply chain disruptions world wide, keep communicating risks/issues as you see them
- ✓ Army leadership kept appraised on a weekly basis
- ✓ Working with Army Contracting Command to review/mitigate impacts

➤ Assured Munitions initiative

- ✓ Identifying raw material sources and assessing risks/issues
- ✓ Looking to expand Industry involvement on risk identification/assessments/solutions
- ✓ Assessing supply chain impacts of Buy American policy




➤ Quality and Production Trends

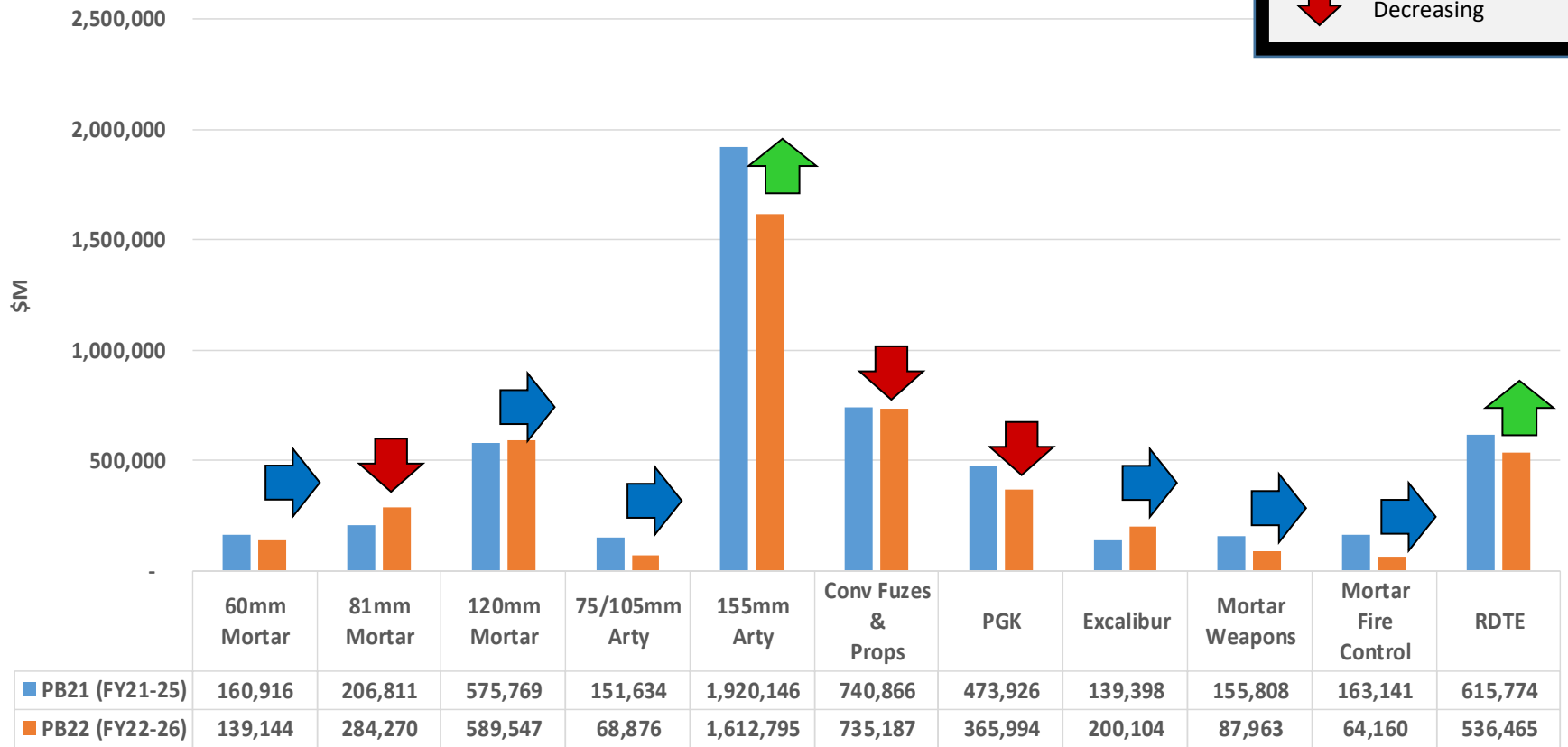
- ✓ X-ray and UT expertise continues to be a watch item
- ✓ Measurement System Evaluation (MSE) clause needs proper planning
 - Tailoring of requirements (which greatly affects equipment qualification efforts) is allowed/encouraged but needs to be coordinated within IPT
- ✓ Need to achieve smart balance between development and production work
- ✓ YPG is an acknowledged constraint that needs to be planned for effectively
 - PM CAS continues to work on prioritization of testing and potential alternative test locations



President's Budget Comparison & Future Outlook for FY23

Future PB23 Forecast:

-  Increasing
-  Consistent
-  Decreasing



Axis Title

■ PB21 (FY21-25) ■ PB22 (FY22-26)



FY22/23 Business Opportunities

Item	Acq Strategy	Projected Award	Total Value	Request for Proposal (RFP) Date/Remarks
120mm Mortar Weapon Systems (M120A1-Towed, M121-Mounted, M326-Mortar Stowage Kit)	F&OC	3QFY22	\$49.2M	RFP Released 30 Jul 21
Main and Drogue Parachutes (Mortars & Artillery)	Small Business Set Aside	3QFY22	\$31M	RFP Projected 1QFY22
60/81mm/120mm Mortar HE LAP	US & Canada	3QFY22	\$370M	RFP Projected 1QFY22
155mm, XM1128 High Explosive Metal Part Assembly	US & Canada	1QFY23	\$344.2M	RFP Projected 1QFY22
M67 Propelling Charges	US & Canada	3QFY22	\$78.7M	RFP Projected 1QFY22



FY22/23 Business Opportunities

Item	Acq Strategy	Projected Award	Total Value	Request for Proposal (RFP) Date/Remarks
M734/M783 Mortar Fuzes	US & Canada	4QFY22	\$413M	RFP Projected 1QFY22
155mm, XM1128 High Explosive, Load, Assemble & Pack	US & Canada	4QFY22	\$412M	RFP Projected 1QFY22
Mortar Fire Control System (FIRECON-Pro)	F&OC	1QFY23	\$49.1M	RFP Projected 2QFY22
155mm, XM1113ER Production	SS	4QFY22	TBD	RFP Projected 1QFY22
60/81mm/120mm Mortar FRPC LAP	US & Canada	1QFY23	\$130M	RFP Projected 1QFY22
M28B2 Primer	US & Canada	4QFY22	\$20.1M	RFP Projected 1QFY22
Projectile Gun Unit (PGU) 43B/44B/45B, M1 Cartridge	US & Canada	1QFY23	\$213.8M	RFP Projected 2QFY22

F&OC: Full and Open Competition
SS: Sole Source



FY22/23 Business Opportunities

Item	Acq Strategy	Projected Award	Total Value	Request for Proposal (RFP) Date/Remarks
105mm Smoke M84A1 Smoke Artillery Projectile/120mm HC Smoke Training Cartridge and 81mm Flash Bang Mortar Cartridge	TBD	TBD	TBD	Market Survey Released August 2021; Assessment Ongoing
M772/M776 Fuze	SS	1QFY23	\$49.8M	RFP Projected 2QFY22
60mm/81mm Body Tube and Tail Cones	Small Business Set Aside	2QFY23	\$29.8M	RFP Projected 2QFY22
60mm/81mm Mortar Tail Fins	Small Business Set Aside	2QFY23	\$49M	RFP Projected 3QFY22
60mm/81mm Shell Bodies	US & Canada	2QFY23	\$170.9M	RFP Projected 4QFY22

TBD: To Be Determined
SS: Sole Source



FY22/23 Business Opportunities

Item	Acq Strategy	Projected Award	Total Value	Request for Proposal (RFP) Date/Remarks
M751/M775/M781 Practice Fuzes	US & Canada	1QFY23	\$74.7M	RFP Projected 3QFY22
60mm/81mm/120mm Mortar Propelling Charges	US & Canada	4QFY23	\$499M	RFP Projected 1QFY23
155mm, XM1113 Production	SS	2QFY23	TBD	RFP Projected 2QFY22
60mm/81mm/120mm Ignition Cartridges	TBD	TBD	TBD	Market Survey Posted 4QFY21
Artillery Fiber Containers	TBD	TBD	TBD	Market Survey Posted 4QFY21
Mortar Fiber Containers	TBD	TBD	TBD	Market Survey Posted 4QFY21

SS: Sole Source
TBD: To Be Determined



FY22/23 Business Opportunities

Item	Acq Strategy	Projected Award	Total Value	Request for Proposal (RFP) Date/Remarks
155mm Burster Tube Assembly, 105mm/155mm Expulsion Charge Assemblies/Booster Case	TBD	TBD	TBD	Market Survey 1QFY22
Excalibur Engineering Services	TBD	TBD	TBD	Market Survey 1QFY22

TBD: To Be Determined

TBD: To Be Determined



Additional PM-CAS Priorities

- Automated inspection and classification of explosive melt-pour, pressed, or cast cure defects using X-Ray or other Non-Destructive methods.
 - ✓ Develop scientific understanding of probability and consequence of explosive defects causing system level hazards including in-bore detonation (i.e. cracks, low density, uncoated grains, etc.)
 - ✓ Large number of new/unique explosive fills and need for very quick fielding (UMR) schedules requires an improved understanding and inspection method.
- Higher performing, and affordable, post launch propulsion to include rocket motors and base bleeds
- System level development of higher muzzle velocity producing propulsion systems, including:
 - ✓ Surface coated multi-base (SCMB) type propellants to flatten temperature/velocity curve
 - ✓ Investment in ignition system and case optimization to maximize Muzzle Velocity to Peak Pressure Ratio
 - ✓ Improved tube materials/liners to enable hotter burning propellant
 - ✓ Improved muzzle brakes, recoil systems, etc. to enable higher impulse to the gun



Additional PM-CAS Priorities *(cont.)*

- Projectile systems that can survive higher pressures and set-back/set-forward loads to take advantage of ERCA 100ksi capability
 - ✓ Improved obturator/rotating bands for both spinning and non-spinning projectiles
 - ✓ Improved strength/weight structures for warheads, projectile joints, etc
 - ✓ Improved electronic and optical mounting and damping systems to lessen load transfer, particularly set forward, to sensitive components
 - ✓ Investment in hardening hollow cavity devices and optics to higher set-back/set-forward loads
 - ✓ Decreased sensitivity (or better scientific understanding) of warhead, rocket motor and other energetics to higher pressure and setback acceleration environment
- Fuze Setting to Support Higher Power and Data Requirements and Autoloader Integration
- Manufacturing and test methods to allow for rapid technology insertion
- Mortar technologies – Range, lethality, mobility, advanced lightweight pointing devices and fire control



Industry Takeaways

- Clear understanding of what the Product Costs is Important to the PM and PCO
 - ✓ Affordability Remains Critical
- Agility needed to meet Army Futures Command requirements
 - ✓ USG: Acquisition approaches
 - ✓ Industry: Ability to respond for more rapid fielding
- Industry/Government Partnership is key to mission success
 - ✓ New development programs moving toward Urgent Material Releases
 - ✓ New production opportunities
- Cyber threat is real and a new warfighting function
- Continued support of FMS and DCS opportunities



**Shifted from a model where USG learns and then asks industry to produce...
To a model where USG and industry learn at the same time,
enabling faster transition to Production and Delivery**