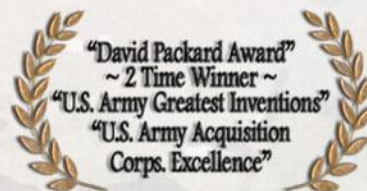




Small Caliber Ammunition & 40mm Grenade Munitions

“Investing in the Future”

2 JUN 2015





Small Caliber & 40mm Grenade Munitions

Small Caliber



OWL LS-CA

Development



M1037 SRTA M200 M193 M855M M856A1 M855A1 Ball



M973 SRTA M974 SRTA M62 M62A1 M80 Ball M80A1 M82 M276 M118 Ball Mod 0 MK248

Production



M1A1 Blank M33 Ball Trace M17 M20 M8 M211 MK257



GREM
DDI
.50 Cal 12 Gauge Buckshot M1030 Breach 9mm M1071 M1042 9mm

Medium Caliber



DNT-HV DNT-LV IRAP

Development



M430A1 M918A1 M385A1 M781 M433 M992 M662 M661 M585 M583A1

Production



Priorities & Focus

- **Future Capabilities**
 - Increase Survivability (One Way Luminescence (OWL))
 - Reduce Warfighter Load (Lightweight Small Caliber Cartridge Case (LSCA))
 - Provide Greater Training Flexibility (Reduced Range Training Ammunition (RRTA))
- **Product Improvements**
 - Deploy 7.62mm M80A1 Enhance Performance Round (EPR) & Lead-Free M62A1 Tracer
 - Continue Manufacturing & Product Improvements
 - Environmental & Health Hazard Mitigations (Lead-Free Automated Primer, Removal of Mercury from Cartridge Case Stress Test)
- **Maintain Industrial Base While Managing Inventory**

Development / Qualification Programs Underway

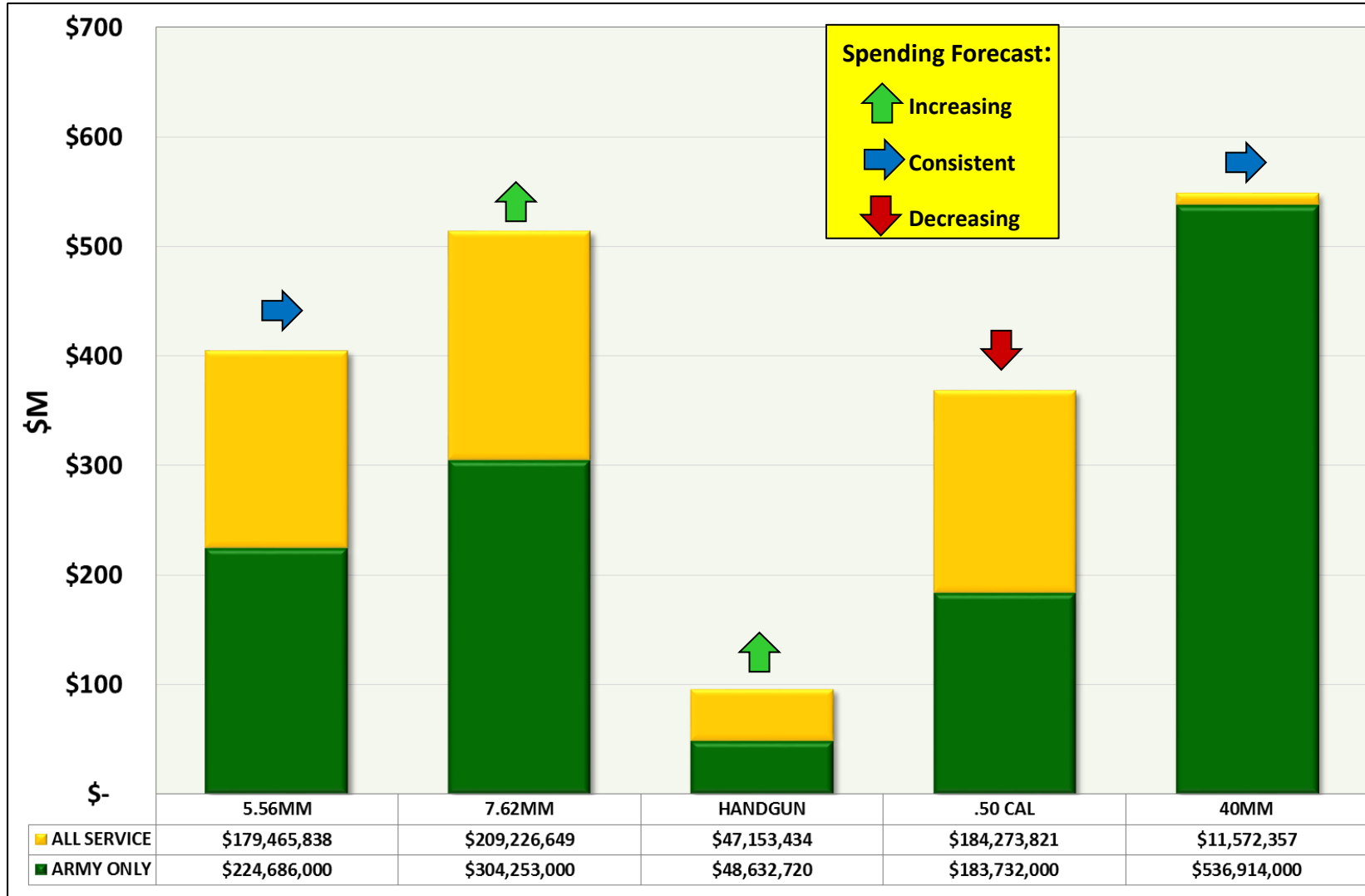
- Modular Handgun Ammunition (Collaboration w/PM-SW)
- One Way Luminescence (OWL)
- Lightweight Ctg. Cases for Small Caliber Ammo
- 40mm Day/Night Thermal (DNT)

Potential FY17-21 Development Programs

- Improved Sniper Ammo
- Reduced Range Training Ammo (RRTA)
- .50 Cal All Purpose Tactical Ctg.
- Advanced 40mm Grenades



PM MAS PB16 Budget Outlook (FY16-FY20)





Future Requirements Small Caliber & 40mm Grenade Munitions

5.56MM

FoA CDD (Initial Joint Review) 1QFY16

- One Way Luminescence (OWL)
- Lightweight Small Caliber Ammunition (LSCA)
- Reduced Range Training Ammunition (RRTA)



7.62MM

FoA CDD (Final Certification) 3QFY15

- OWL
- LSCA
- RRTA



.50 Cal.

Munitions CDD (Initial Joint Review) 2QFY16

- OWL
- LSCA
- All Purpose Tactical Ctg.
- RRTA



Precision (PSR)

Munitions CDD (ARCIC Validation Staffing) 1QFY17

- .338 LM: Improved Performance Round (IPR), Anti-Materiel & Subsonic
- 7.62mm: IPR & Subsonic
- .300 WM: IPR & Subsonic



Future Systems Ammo

- Modular Handgun System
- Small Arms Ammunition Configuration Study
- Next Generation Squad Weapon
- Lightweight Dismounted Automatic Machinegun
- Future Heavy Weapon Systems



40mm

Low Velocity & High Velocity 40mm Munitions CDD

- 40mm Day/Night Thermal (DNT)
- Advanced 40mm Grenades

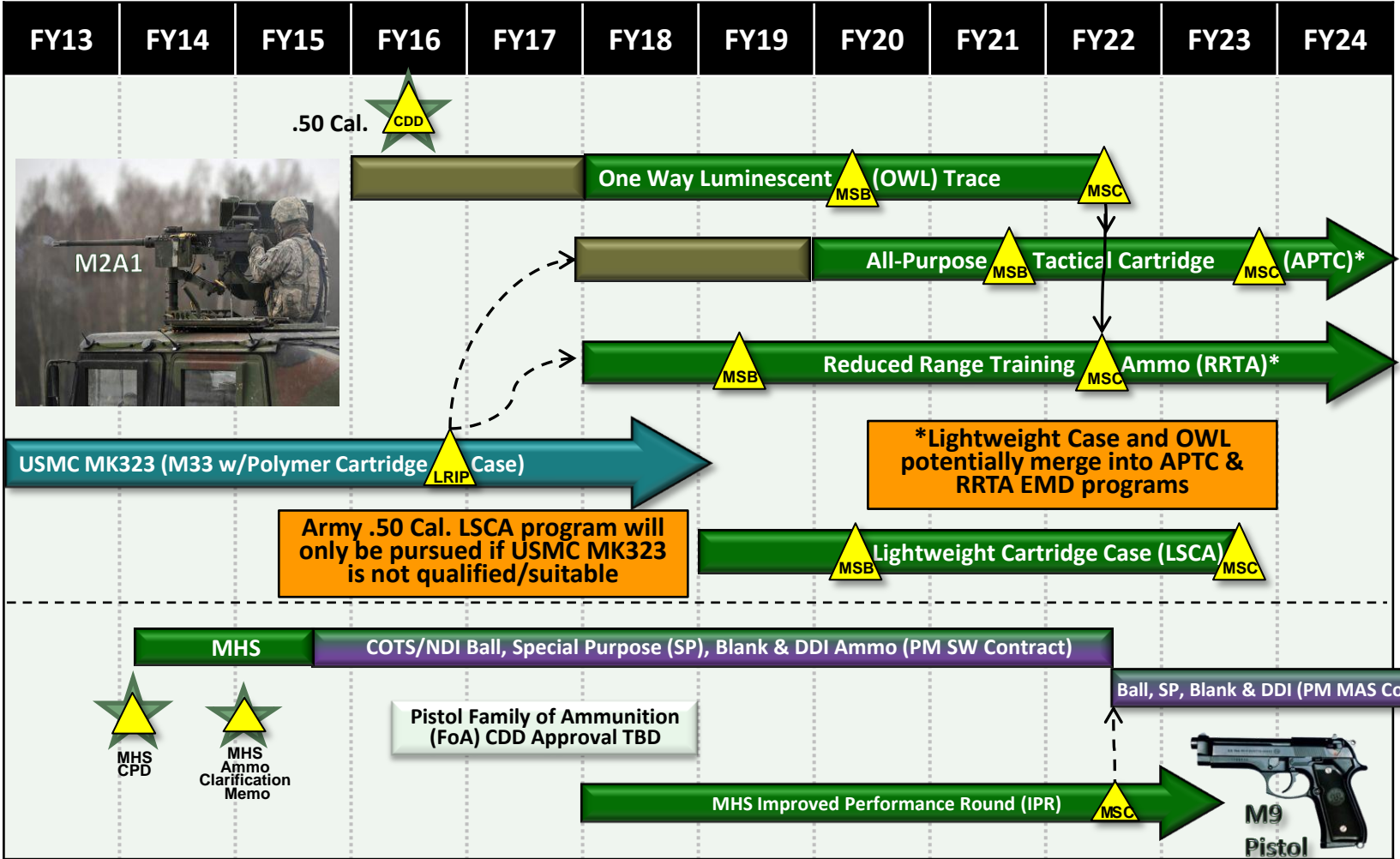


FoA = Family of Ammunition

Influx of Many New R&D Programs Expected in Future That Will Be Impacted By the Small Arms Configuration Study



Small Caliber Family of Ammunition Roadmap

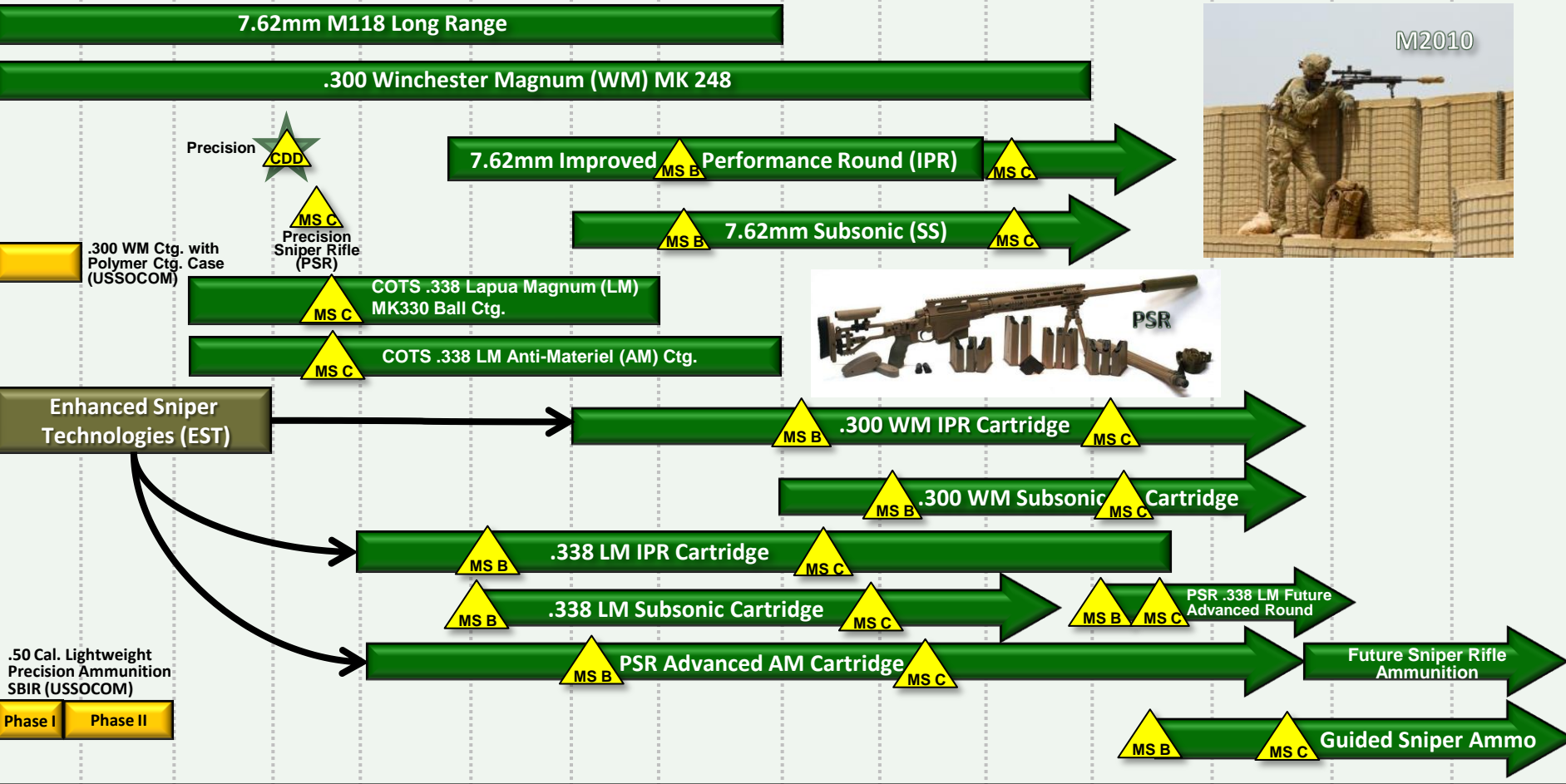


Other Service | S&T | PM | USMC



Precision Family of Ammunition Roadmap

FY14 FY15 FY16 FY17 FY18 FY19 FY20 FY21 FY22 FY23 FY24 FY25-30 FY31-35 FY36-40 FY41-46

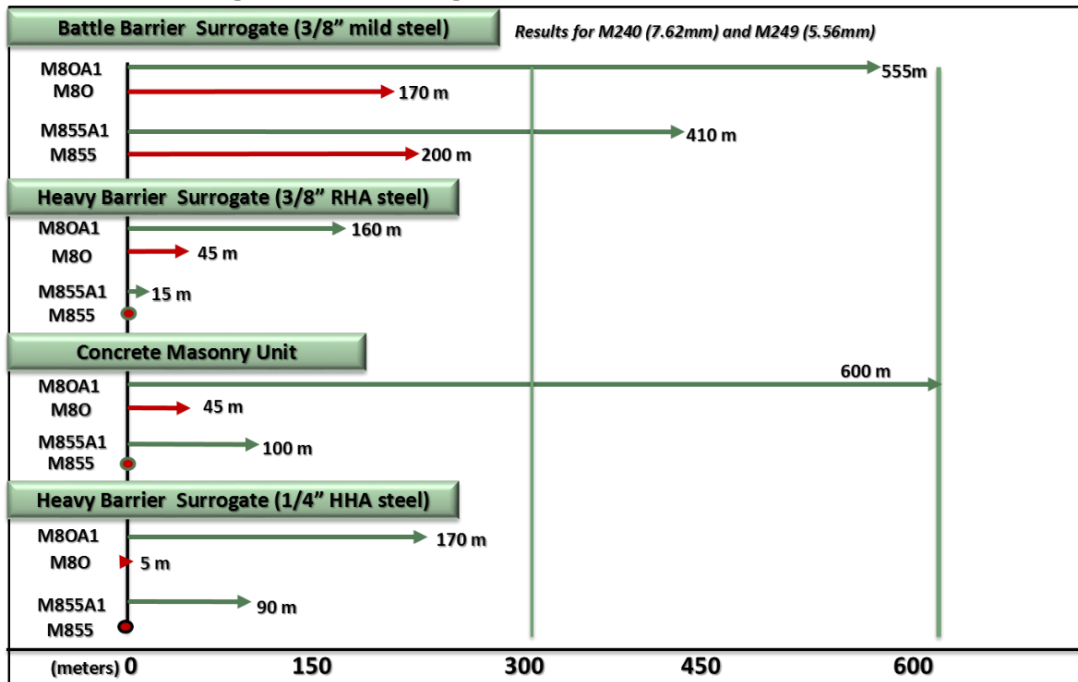


S&T PM USSOCOM



Enhanced Performance Round (EPR)

- EPR technology represents the most significant performance leap in small-arms ammunition in decades
 - It increases soft-target consistency, hard-target penetration, and the range at which US Warfighters can achieve those lethal effects on the enemy
- System Level Tested in Army & Other Service Weapons
 - >1 Million rounds tested for each caliber demonstrated system Reliability & Durability is as good as or better than legacy systems
 - The Army Live Fire Test and Evaluation program has validated and documented the lethality and effectiveness of M8551 and M80A1 cartridges
 - EPR Maintains Accuracy Resulting in Extended Barrel Life
- M855A1 is proven with over 10M rounds fired in combat
 - Overwhelming Positive Warfighter Feedback



Enhanced Performance Round

Exposed Steel Tip
Lead Free Projectile
Significant Performance Improvement:
Hard Target
Improved Consistency
Increased Range

Replaces M855 and M80

Companion Lead-free Tracer for each:
M856A1
M62A1



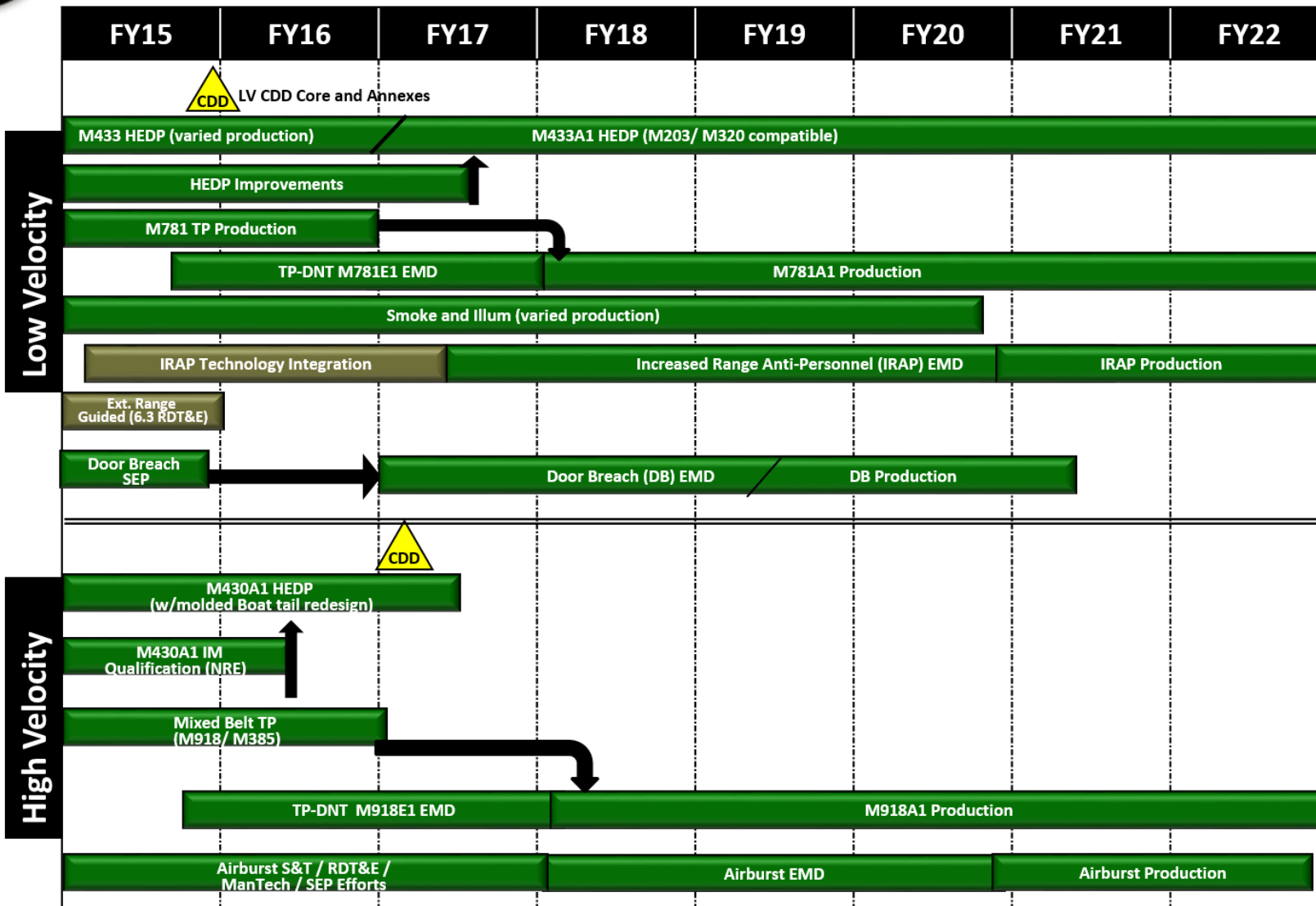


EPR Warfighter Feedback

- **Overwhelming positive response from multiple combat surveys**
- **Fielded 44M rounds to Theatre**
- **Theatre Operations – Warfighter Feedback on M855A1 EPR**
 - *SPC Ross Thornton, B Co, also working as part of TF Bastogne, reported “We received the M855A1 in the field, and conducted our own testing of the round after zero and zero confirmation...and set about to test the round...from the tests we conducted EPR out-performed the green tip 10-1.”*
 - *SGT Jason Marole, assigned to B CO, TF Bastogne, reported “The enemy knows we have M4s that don’t have the range of our long guns, so they know they can get a little closer, but when we switched over to the new ammo... we can finally engage them at 700 meters and take them out, then we saw a lot less of them standing out in the open.”*
 - *Un-identified Ranger coming back from ARCENT, “...We got a hold of this ammo during a operational break so we could check it out, and found it was more accurate than green tip...then we went out on mission and found it was much better to put down the enemy – like 7.62mm”*
 - *SPC James Martin, U.S. Army Infantry Sniper, reported, “with my M4 equipped with the Leopold Mark AR scope on it I was able to consistently hit a point target at 800 meters with the EPR round I tried this with the M855 green tip and it was nowhere near as consistent or accurate.”*



40mm Grenade Roadmap





Future PM MAS Competitive Opportunities

FY16					
Program/ Item/ Description	Projected RFP Release	Projected Award Date	(\$M) Amount	Contract Strategy	Contract Type
Small Caliber Second Source	JUN/FY15	MAR/FY16	\$580.0	NTIB	FFP
Pistol Family (9mm, .38 cal, .45 cal)	JUL/FY15	MAR/FY16	\$99.2	C	IDIQ
9mm DDI	OCT/FY15	MAR/FY16	\$1.8	C	FFP
*Competitive (C), National Tech. & Industrial Base (NTIB), **Firm Fixed Price (FFP), Indefinite Delivery/ Indefinite Qty. (IDIQ), Cost Plus Fixed Free (CPFF)					

- Precision Sniper Rifle (PSR) Ammunition
- 40mm Systems, IRAP & Door Breach
- Non-Standard Ammunition & Mortar Weapon System Acquisition; Acquisition Strategy under development, planned award FY16



Message to Industry

- **Although FY15 is likely the low point in Direct Fire Ammunition, training ammunition consumption is trending upward (comparing first 2 quarters in FY2014 to first 2 quarters in FY2015)**
- **Army is investing in capability improvements to ensure future overmatch capability for Warfighters; we are looking for industry to invest in technology advancements and maintain technical skills**
- **There are upcoming opportunities for industry to participate in small caliber ammunition and 40mm grenade R&D and production**