

# **Fiscal Year (FY) 2020 President's Budget**

## **Operation and Maintenance, Defense-Wide Missile Defense Agency**



**March 2019**

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**MISSILE DEFENSE AGENCY**  
**Operation and Maintenance, Defense-Wide**  
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<u>Appropriation Summary</u>	<u>FY 2018 Actuals</u>	<u>Price Change</u>	<u>Program Change</u>	<u>FY 2019 Enacted</u>	<u>Price Change</u>	<u>Program Change</u>	<u>FY 2020 Estimate</u>
O&M, Defense-Wide	\$491.2	\$8.8	\$-27.5	\$472.5	\$9.4	\$40.6	\$522.5

**Description of Operations Financed:**

MDA BMD operations and maintenance support are funded through the O&M Defense-wide appropriation. Operations include Aegis BMD that provides a wide range of support activities for deployed Aegis BMD ships and Aegis Ashore facilities including Standard Missile-3 (SM-3) Sustainment, BMD Aegis Weapon System (AWS) Sustainment, and sustainment for Aegis Ashore sites. Ground-Based Midcourse Defense for weapon system maintenance, repair, storage, training, supply support, sustaining engineering, network operations, integrated logistics support, configuration control, scheduling, execution control, system transitioning, mission operations support, and performance reporting. Additionally, funding provides Base Operations Support (BOS), communication support, and utilities for facility sustainment and maintenance at the various GMD sites. Ballistic Missile Defense System (BMDS) AN/TPY-2 Radars for sustainment of 12 Army Navy/Transportable Radar Surveillance and Control-2 radars including forward-based radars and Terminal High Altitude Area Defense configured radars to include supply support, repair, maintenance, modernization, transportation, parts storage, Special Tools and Test Equipment, recurring and delta training, training device maintenance, engineering support, Interactive Electronic Technical Manual (IETM) updates, software user guide updates, software revision certification and depot-level maintenance for the Forward Based Mode (FBM) missile defense unique equipment and Terminal High Altitude Area Defense (THAAD) which supports MDAs responsibility for the sustainment of the THAAD missile defense unique or developmental items, while the U.S. Army is responsible for the operations and sustainment of the common items.

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	<b><u>FY 2018</u></b> <b><u>Actuals</u></b>	<b><u>FY 2019</u></b> <b><u>Enacted</u></b>	<b><u>FY 2020</u></b> <b><u>Estimate</u></b>
<b>4. Administrative and Servicewide Activities</b>	<b>491,179</b>	<b>472,473</b>	<b>522,529</b>
Aegis BMD Program	74,208	78,074	75,237
BMDS Radars Program	208,176	167,635	194,255
Ground-Based Midcourse Program	138,751	139,204	153,218
THAAD Program	70,044	87,560	99,819
<b>Total Operation and Maintenance, Defense-Wide</b>	<b>491,179</b>	<b>472,473</b>	<b>522,529</b>

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	<b><u>FY 2018</u></b> <b><u>Actuals</u></b>	<b><u>FY 2019</u></b> <b><u>Enacted</u></b>	<b><u>FY 2020</u></b> <b><u>Estimate</u></b>
<b>4. Administrative and Servicewide Activities</b>	<b>491,179</b>	<b>472,473</b>	<b>522,529</b>
Aegis BMD Program	74,208	78,074	75,237
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Ground-Based Midcourse Program	138,751	139,204	153,218
THAAD Program	70,044	87,560	99,819
<b>Total Operation and Maintenance, Defense-Wide</b>	<b>491,179</b>	<b>472,473</b>	<b>522,529</b>

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**Operation and Maintenance, Defense-Wide**  
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	<u>FY 2018</u>	<u>Price</u>	<u>Price</u>	<u>Program</u>	<u>FY 2019</u>	<u>Price</u>	<u>Price</u>	<u>Program</u>	<u>FY 2020</u>
	<u>Program</u>	<u>Growth</u>	<u>Growth</u>	<u>Growth</u>	<u>Program</u>	<u>Growth</u>	<u>Growth</u>	<u>Growth</u>	<u>Program</u>
		<u>Percent</u>				<u>Percent</u>			
<u>Travel</u>									
308	Travel of Persons	188	1.80%	3	-191	0	2.00%	0	220
<b>399</b>	<b>Total Travel</b>	<b>188</b>		<b>3</b>	<b>-191</b>	<b>0</b>		<b>0</b>	<b>220</b>
<u>Supplies &amp; Materials</u>									
401	DLA Energy (Fuel Products)	0	-0.40%	0	700	700	-0.67%	-5	151
<b>499</b>	<b>Total Supplies &amp; Materials</b>	<b>0</b>		<b>0</b>	<b>700</b>	<b>700</b>		<b>-5</b>	<b>151</b>
<u>DWCF Purchases</u>									
677	DISA Telecomm Svcs - Reimbursable	2,425	1.90%	46	-2,471	0	2.00%	0	0
<b>699</b>	<b>Total DWCF Purchases</b>	<b>2,425</b>		<b>46</b>	<b>-2,471</b>	<b>0</b>		<b>0</b>	<b>0</b>
<u>Transportation</u>									
771	Commercial Transport	4,452	1.80%	80	1,366	5,898	2.00%	118	-2,421
<b>799</b>	<b>Total Transportation</b>	<b>4,452</b>		<b>80</b>	<b>1,366</b>	<b>5,898</b>		<b>118</b>	<b>-2,421</b>
<u>Other Purchases</u>									
912	Rental Payments to GSA (SLUC)	0	1.80%	0	253	253	2.00%	5	-10
913	Purchased Utilities (Non-Fund)	2,269	1.80%	41	24	2,334	2.00%	47	41
914	Purchased Communications (Non-Fund)	83	1.80%	1	666	750	2.00%	15	1,768
915	Rents (Non-GSA)	1,226	1.80%	22	-1,248	0	2.00%	0	0
920	Supplies & Materials (Non-Fund)	31,988	1.80%	576	11,327	43,891	2.00%	878	-24,188
922	Equipment Maintenance By Contract	338,326	1.80%	6,090	-35,278	309,138	2.00%	6,183	30,236
923	Facilities Sust, Rest, & Mod by Contract	35,760	1.80%	644	-13,406	22,998	2.00%	460	3,685
925	Equipment Purchases (Non-Fund)	0	1.80%	0	3,448	3,448	2.00%	69	-3,266
930	Other Depot Maintenance (Non-Fund)	13,966	1.80%	251	19,377	33,594	2.00%	672	44,481
932	Mgt Prof Support Svcs	1,602	1.80%	29	-681	950	2.00%	19	117

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	<b>FY 2018</b>	<b>Price</b>	<b>Price</b>	<b>Program</b>	<b>FY 2019</b>	<b>Price</b>	<b>Price</b>	<b>Program</b>	<b>FY 2020</b>
	<b><u>Program</u></b>	<b><u>Growth</u></b>	<b><u>Growth</u></b>	<b><u>Growth</u></b>	<b><u>Program</u></b>	<b><u>Growth</u></b>	<b><u>Growth</u></b>	<b><u>Growth</u></b>	<b><u>Program</u></b>
		<b><u>Percent</u></b>				<b><u>Percent</u></b>			
934 Engineering & Tech Svcs	2,137	1.80%	38	327	2,502	2.00%	50	900	3,452
937 Locally Purchased Fuel (Non-Fund)	1,250	-0.40%	-5	-1,245	0	-0.67%	0	0	0
984 Equipment Contracts	3,814	1.80%	69	-3,842	41	2.00%	1	1,804	1,846
987 Other Intra-Govt Purch	34,131	1.80%	614	2,105	36,850	2.00%	737	-13,250	24,337
989 Other Services	9,710	1.80%	175	-826	9,059	2.00%	181	-575	8,665
990 IT Contract Support Services	7,852	1.80%	141	-7,926	67	2.00%	1	932	1,000
<b>999 Total Other Purchases</b>	<b>484,114</b>		<b>8,686</b>	<b>-26,925</b>	<b>465,875</b>		<b>9,318</b>	<b>42,675</b>	<b>517,868</b>
<b>Total</b>	<b>491,179</b>		<b>8,815</b>	<b>-27,521</b>	<b>472,473</b>		<b>9,431</b>	<b>40,625</b>	<b>522,529</b>

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	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Change</u> <u>FY 2019/2020</u>
Contractor FTEs (Total)	986	1,067	1,031	-36

**Personnel Summary Explanations:**

The FY 2019 to FY 2020 the net decrease in contractor FTEs reflects the following changes:

- A reduction of -40 contractor FTEs in the BMDS Radar Program due to reduced contractor requirements.
- The THAAD Program decrease of -11 contractor FTEs is due to the continued transition from the prime contractor to an organic capability for sustainment and maintenance of THAAD post-deployed system software.
- The decrease of -9 FTEs in Aegis BMD Program is due to the reduction in SM-3 IA/IB recertification, G-switch and TSRM efforts.
- Ground-Based Midcourse Defense Program increases at GMD sites to support added requirements due to missile field expansion and host base increased communications support at Fort Greely, AK, twenty-four hour assured maintenance response capability, and increased cyber defense at GMD sites resulting in an overall increase of +24 FTEs.

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	<u><b>TOTAL</b></u>
<b>FY 2019 President's Budget Request (Amended, if applicable)</b>	<b>499,817</b>
1. Congressional Adjustments	
a. Distributed Adjustments	
1) Re-baselining of Requirements	-26,150
b. Undistributed Adjustments	
1) Across-The-Board Reduction: Historical Underexecution	-1,283
c. Adjustments to Meet Congressional Intent	
d. General Provisions	
1) Fuel Increase (Section 8118)	89
<b>FY 2019 Appropriated Amount</b>	<b>472,473</b>
2. War-Related and Disaster Supplemental Appropriations	
3. Fact-of-Life Changes	
<b>FY 2019 Baseline Funding</b>	<b>472,473</b>
4. Reprogrammings (Requiring 1415 Actions)	
<b>Revised FY 2019 Estimate</b>	<b>472,473</b>
5. Less: Item 2, War-Related and Disaster Supplemental Appropriations and Item 4, Reprogrammings	
<b>FY 2019 Normalized Current Estimate</b>	<b>472,473</b>
6. Price Change	9,431
7. Functional Transfers	
8. Program Increases	
a. Annualization of New FY 2019 Program	
b. One-Time FY 2020 Increases	
c. Program Growth in FY 2020	

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	<u><b>TOTAL</b></u>
1) BMDS Radars Program	23,274
2) Aegis BMD Program	12,545
3) Ground-Based Midcourse Defense Program	12,460
4) THAAD Program	10,511
9. Program Decreases	
a. Annualization of FY 2019 Program Decreases	
b. One-Time FY 2019 Increases	
c. Program Decreases in FY 2020	
1) Aegis BMD SM-3 Program	-14,941
2) Aegis Ashore Program	-2,000
3) Ground Based Midcourse Defense Program	-1,224
<b>FY 2020 Budget Request</b>	<b>522,529</b>



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**Operation and Maintenance, Defense-Wide Summary (\$ in thousands)  
Budget Activity (BA) 4: Administration and Service-Wide Activities**

	FY 2018	Price	Program	FY 2019	Price	Program	FY 2020
	<u>Actuals</u>	<u>Change</u>	<u>Change</u>	<u>Enacted</u>	<u>Change</u>	<u>Change</u>	<u>Estimate</u>
MDA	491,179	8,815	-27,521	472,473	9,431	40,625	522,529

**I. Description of Operations Financed:** Provides the following Ballistic Missile Defense (BMD) operations and maintenance support:

**A. Aegis Ballistic Missile Defense (BMD).** Funding provides a wide range of support activities for deployed Aegis BMD ships and Aegis Ashore facilities including Standard Missile (SM-3) sustainment, BMD Aegis Weapons System (AWS) sustainment, and sustainment for Aegis Ashore sites.

The SM-3 sustainment program includes the recertification/repair of missiles, installation of software and hardware updates, demilitarization of SM-3 missiles, modeling and simulation and logistics efforts, and also provides missile transportation back to the second destination upon completion of recertification and repairs.

The BMDS AWS sustainment program provides technical and engineering services for in-service BMD ships and sites, along with infrastructure maintenance for BMDS platforms executing BMD test missions, to ensure the in-service BMD AWS baselines maintain the directed operational availability. The BMD AWS sustainment effort includes: BMD Engineering Agent technical support and operational analysis for BMD units; engineering reach-back services supporting casualty correction, issues, and improvements; maintenance, certification, and delivery of BMD AWS computer program updates to the Fleet; Aegis software maintenance corrections in the common source library; test site infrastructure and maintenance; integrated logistics support of BMD unique parts, technical documentation review and implementation of updated maintenance concepts;

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**I. Description of Operations Financed (cont.)**

diminishing manufacturing sources (DMS), and obsolete materiel surveillance, identification, and resolution maintenance actions on BMD ships and sites participating in MDA sponsored test missions.

The Aegis BMD effort also provides engineering services for Aegis Ashore Host Nation repairs and rework required post construction activities in support of site transition. This includes Host Nation planning yard activities to track modernization; updates to the Aegis Ashore technical data package to ensure core Aegis Ashore Deckhouse attributes are maintained; development of required test procedures to support on-site installation and checkout (INCO) and system operations verification testing (SOVT) and provides updates to training, warfighter technical publications, and the initial outfitting requirements for maintenance and logistics materiel.

**B. Ground Based Midcourse (GMD).** Funding provides weapon system equipment maintenance, repair, storage, training, supply support, sustaining engineering, network operations, integrated logistics support, configuration control, scheduling, execution control, system transitioning, mission operations support and performance reporting. Additionally, funding provides Base Operations Support (BOS), communications support, and utilities for facility sustainment and maintenance at the various GMD sites.

**C. Ballistic Missile Defense Systems (BMDS) Radars.** Funding provides sustainment of 12 Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) Forward-Based and Terminal High Altitude Area Defense (THAAD) configured Terminal Mode radars to include supply support, repair, maintenance, modernization, transportation, parts, storage, special tools and test equipment, recurring and delta training, technical interface, training device maintenance, engineering support, interactive electronic technical manual (IETM) updates, software user guide updates, software revision certification, and depot-level maintenance for MDA's missile defense unique equipment. Funding also provides

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**I. Description of Operations Financed (cont.)**

Electronic Equipment Unit (EEU) retrofits at Letterkenny Army Depot to replace obsolete equipment, incorporate updates to upgrade servers, and enhance radar capabilities. Additionally, funding provides sustainment unique to the MDA Missile Defense mission for the Upgraded Early Warning Radar (UEWR)/COBRA DANE Radar, which MDA sustains and operates in conjunction with the U.S. Air Force.

**D. Terminal High Altitude Area Defense (THAAD).** The MDA is responsible for the sustainment for the THAAD missile defense unique or development items, while the U.S. Army is responsible for the operations and sustainment of the common items. The MDA funding provides sustainment for all fielded THAAD Batteries, ensures THAAD assets are properly maintained and ensures crews are trained to meet Combatant Commander needs including:

1. Field and sustainment level supply, maintenance, modernization, hazardous materials/waste disposal, and depot-level maintenance for THAAD missile defense unique equipment.
2. Spares, Interceptor spares, repair parts, and maintenance capability at the location of each THAAD battery.
3. Engineering support for the THAAD missile defense unique equipment.
4. Deployment software support for fielded software, to include deficiency report review, error correction, incremental capability improvements, and hardware/system interface compatibility maintenance.
5. Missile transportation and handling from the missile storage location to the site of the THAAD launchers.
6. IETM updates software users' guide updates, and software revision certification.
7. Maintenance and upkeep for all THAAD training devices.

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**I. Description of Operations Financed (cont.)**

- 8. Supply, maintenance and transportation support for all new equipment training, and sustainment training relating to design changes and equipment upgrades.
- 9. Special tools and test equipment for the organic depot.

**II. Force Structure Summary:**

N/A

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III. Financial Summary (\$ in thousands)

	FY 2019						
			Congressional Action				
	FY 2018	Budget				Current	FY 2020
A. BA Subactivities	Actuals	Request	Amount	Percent	Appropriated	Enacted	Estimate
4. Administrative and Servicewide Activities	491,179	499,817	-27,344	-5.5	472,473	472,473	522,529
Aegis BMD Program	74,208	83,837	-5,763	-6.9	78,074	78,074	75,237
BMDS Radars Program	208,176	176,143	-8,508	-4.8	167,635	167,635	194,255
Ground-Based Midcourse Program	138,751	147,229	-8,025	-5.5	139,204	139,204	153,218
THAAD Program	70,044	92,608	-5,048	-5.5	87,560	87,560	99,819
Total	491,179	499,817	-27,344	-5.5	472,473	472,473	522,529

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III. Financial Summary (\$ in thousands)

	Change <u>FY 2019/FY 2019</u>	Change <u>FY 2019/FY 2020</u>
<b>B. <u>Reconciliation Summary</u></b>		
<b>Baseline Funding</b>	<b>499,817</b>	<b>472,473</b>
Congressional Adjustments (Distributed)	-26,150	
Congressional Adjustments (Undistributed)	-1,283	
Adjustments to Meet Congressional Intent		
Congressional Adjustments (General Provisions)	89	
<b>Subtotal Appropriated Amount</b>	<b>472,473</b>	
Fact-of-Life Changes (2019 to 2019 Only)		
<b>Subtotal Baseline Funding</b>	<b>472,473</b>	
Supplemental		
Reprogrammings		
Price Changes		9,431
Functional Transfers		
Program Changes		40,625
<b>Current Estimate</b>	<b>472,473</b>	<b>522,529</b>
Less: Wartime Supplemental		
<b>Normalized Current Estimate</b>	<b>472,473</b>	

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**III. Financial Summary (\$ in thousands)**

	<u>Amount</u>	<u>Totals</u>
<b>C. <u>Reconciliation of Increases and Decreases</u></b>		
<b>FY 2019 President's Budget Request (Amended, if applicable)</b>		<b>499,817</b>
1. Congressional Adjustments		-27,344
a. Distributed Adjustments		
1) Re-baselining of Requirements	-26,150	
b. Undistributed Adjustments		
1) Across-The-Board Reduction: Historical Underexecution	-1,283	
c. Adjustments to Meet Congressional Intent		
d. General Provisions		
1) Fuel Increase (Section 8118)	89	
<b>FY 2019 Appropriated Amount</b>		<b>472,473</b>
2. War-Related and Disaster Supplemental Appropriations		
3. Fact-of-Life Changes		
<b>FY 2019 Baseline Funding</b>		<b>472,473</b>
4. Reprogrammings (Requiring 1415 Actions)		
<b>Revised FY 2019 Estimate</b>		<b>472,473</b>
5. Less: Item 2, War-Related and Disaster Supplemental Appropriations and Item 4, Reprogrammings		
<b>FY 2019 Normalized Current Estimate</b>		<b>472,473</b>
6. Price Change		9,431
7. Functional Transfers		
8. Program Increases		58,790
a. Annualization of New FY 2019 Program		
b. One-Time FY 2020 Increases		
c. Program Growth in FY 2020		
1) BMDS Radars Program	23,274	
+\$13,681 increase for AN/TPY-2 Cooling Equipment Unit (CEU) refurbishments due to criticality for both forward based and terminal mode radars located in multiple geographical locations. Depot-level		

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**III. Financial Summary (\$ in thousands)**

<b>C. <u>Reconciliation of Increases and Decreases</u></b>	<b><u>Amount</u></b>	<b><u>Totals</u></b>
<p>maintenance is required to restore CEU equipment used in the high optempo corrosive environments to ensure 24 hours a day, 365 days per year availability.</p> <p>+ \$9,593 provides increased funding to procure mission-critical and fleet spares required due to the high optempo corrosive environments to ensure 24 hours a day, 365 days per year availability. (FY 2019 Baseline: \$167,635 thousand; +0 FTEs)</p>		
<p>2) Aegis BMD Program</p> <p>+ \$12,545 provides for the transition from RDT&amp;E to O&amp;M for non-developmental engineering site and Common Source Library (CSL) Software Maintenance costs for the BMDS mission specific Aegis BL 9.2 (BMD 5.1) which has now been certified and operational. (FY 2019 Baseline: \$78,074 thousand; +0 FTEs)</p>	12,545	
<p>3) Ground-Based Midcourse Defense Program</p> <p>+ 3,897 provides increased cyber defense posture and cyber threat awareness at GMD sites; includes establishing a Network Intrusion Monitoring (NIM) team at Fort Greely to provide greater cyber defense.</p> <p>+ 3,589 provides additional contractor personnel required to ensure immediate 24/7 maintenance response and operational reporting for weapon system issues at all GMD sites.</p> <p>+ \$3,514 funds increased operations, sustainment, maintenance, operational support and equipment</p>	12,460	



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**III. Financial Summary (\$ in thousands)**

**C. Reconciliation of Increases and Decreases**

**Amount**

**Totals**

required for the new missile field at Fort Greely, AK.

+ \$1,460 thousand funds an improved host base communications at Fort Greely, AK to address obsolescence issues, provides enhanced communications infrastructure, increased maintenance and repair and telephone upgrades. (FY 2019 Baseline: \$139,204 thousand; +0 FTEs)

4) THAAD Program

10,511

+ \$4,140 funds additional Post Deployment Software Support for the 4th deployed THAAD battery, to resolve increased User anomaly submissions and Software Change Requests, multi-version integration testing, and simultaneous development of multiple S/W baselines.

+ \$1,790 funds the purchase of test program sets (TPS) (below the procurement funding threshold) to establish the capability to repair and maintain depot level reparables (DLR) at Letterkenny Army Depot that were previously tested at a prime contractor facility. The transition from contract repair to a depot program is IAW 10 U.S.C. 2464 which mandates DoD maintain a core capability that is government-owned and government operated with government equipment and facilities. The DLRs (ie: Power Management Unit, Power Filter Unit, Tactical Operation Station and Launch Control Station Power

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**C. Reconciliation of Increases and Decreases**

**Amount**

**Totals**

Distribution Units, Radio Power Supply etc.) require testing as a quality measure and final step in the overhaul or repair before the asset is returned to the field. The TPS provide the depot with this testing capability.

+\$1,651 provides additional sustainment support, deployed contractor support, and increased transportation cost for spares/repair parts required for the increase from three in FY 2019 to four deployed OCONUS batteries in FY 2020. Deployments are planned based on COCOM requirements and needs. Additional information can be provided at the appropriate level of security classification.

+\$1,600 funds an increase in THAAD battery sustainment costs due to the addition of new site requirements associated with the implementation of the remote launcher capability concept for support. This new support concept means that batteries with a remote launcher capability will no longer operate from a single location, and will instead need to be able to be supported at multiple locations in that area of operations beginning in FY 2020.

+\$1,330 funds the purchase of spare components required to repair increasing numbers of failed THAAD interceptors and return them to the field in a timely manner. Due to the age and quantity of fielded

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<b>C. <u>Reconciliation of Increases and Decreases</u></b>	<b><u>Amount</u></b>	<b><u>Totals</u></b>
interceptors, the use of spares is cost effective tool that can provide a quick repair and return of interceptors to the field, supporting the demanding readiness levels for this weapon system. (FY 2019 Baseline: \$87,560 thousand; +0 FTEs)		
9. Program Decreases		-18,165
a. Annualization of FY 2019 Program Decreases		
b. One-Time FY 2019 Increases		
c. Program Decreases in FY 2020		
1) Aegis BMD SM-3 Program	-14,941	
-\$7,849 reflects a reduction of SM-3 Block IA/B missile recertifications from 79 in FY 2019 to 32 in FY 2020 due to Navy Fleet Forces Command changes in ship and missile availability. The reductions in recertifications will not impact fleet capacity. Missiles are planned for recertification every 4 years based on the placed-in-service date and when ships are planned to be in port for the offload and replacement of the missiles; the timing of recertifications is based upon warfighter requirements and availability of missiles.		
-\$7,092 reflects a reduction in estimated repairs made during missile recertification (such as G-switch replacement and Third Stage Rocket Motor (TSRM) nozzle replacement) that corresponds with the reduction of planned missile recertifications. (FY 2019 Baseline: \$78,074 thousand)		
2) Aegis Ashore Program	-2,000	

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**III. Financial Summary (\$ in thousands)**

<b>C. <u>Reconciliation of Increases and Decreases</u></b>	<b><u>Amount</u></b>	<b><u>Totals</u></b>
- \$2,000 reflects the delay in completion of the Poland Military Construction project and stand up the Aegis Ashore Commission System from FY 2018 to FY 2020. (A warranty is in place while the project undergoes construction which includes engineering, preventive and corrective maintenance of the systems.) (FY 2019 Baseline: \$78,074 thousand; +0 FTEs)		
3) Ground Based Midcourse Defense Program - \$1,224 reflects fewer requirements for operational weapons system materiel purchases resulting from completion of the High Powered Amplifier (HPA) Radio Frequency Output Assembly (RFOA) obsolescence mitigation effort in FY 2019 at the GMD remote communication sites. The previous shortage of spare parts required the prime contractor to initiate obsolescence mitigation efforts resulting in a purchase of additional HPA RFOAs which are now in use. (FY 2019 Baseline: \$139,204 thousand)	-1,224	
<b>FY 2020 Budget Request</b>		<b>522,529</b>

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**IV. Performance Criteria and Evaluation Summary:**

	FY 2018 <u>Actuals</u>	FY 2019 <u>Enacted</u>	FY 2020 <u>Estimate</u>
<b>1. Operational Support</b>	<b>491,179</b>	<b>472,473</b>	<b>522,529</b>
Aegis Program	74,208	78,074	75,237
Ground Base Midcourse	138,751	139,204	153,218
BMDS Radars	208,176	167,635	194,255
THAAD Program	70,044	87,560	99,819
<b>Total Operations and Maintenance, Defense Wide</b>	<b>491,179</b>	<b>472,473</b>	<b>522,529</b>

The MDA Ballistic Missile Defense (BMD) mission is to deliver an enduring, operationally effective and supportable BMD capability to defend the nation, deployed forces, friends and allies.

A. Aegis BMD. The Aegis BMD element of the BMDS capitalizes upon and evolves from the existing U. S. Navy Aegis Weapons System (AWS) and Standard Missile (SM) infrastructures. Aegis BMD provides a forward-deployable, mobile capability to detect and track Ballistic Missiles of all ranges, and the ability to destroy short-range, medium-range, and intermediate-range ballistic missiles in the midcourse phase of flight and shorter range missile in terminal phase. Aegis BMD also provides a long range surveillance and track (LRS&T) capability to the BMDS. By the end of FY 2020, there will be 41 total BMDS capable ships, which is an increase of 4 ships from FY 2019, requiring maintenance support.

B. Ground-Based Midcourse (GMD). The GMD fielded weapon system is under the command of U.S. Northern Command (NORTHCOM) and is operated by Soldiers from the 100th Missile Defense Brigade (five crews) headquartered at Schriever AFB (SAFB), Colorado, and its

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**IV. Performance Criteria and Evaluation Summary:**

49th Missile Defense Battalion (five crews) at Fort Greely, Alaska (FGA). In FY 2020, MDA continues to support 44 operationally deployed GBIs located at FGA (40 GBIs) and Vandenberg Air Force Base, California (VAFB) (4 GBIs). Each GBI delivers a single Exoatmospheric Kill Vehicle (EKV) to defeat threat warheads in space during the midcourse phase of the ballistic trajectory. The GMD Fire Control System consists of redundant fire control nodes at FGA (two each) and the Missile Defense Integration and Operations Center (MDIOC) (two each) at SAFB. In-Flight Interceptor Communications System (IFICS) Data Terminals (IDTs) are currently located at FGA (two each) VAFB (two each) Eareckson Air Station, Alaska (EAS) and Fort Drum, New York. In FY 2020, MDA will initiate maintenance and support for the new Missile Field 4 at Fort Greely, Alaska.

C. Ballistic Missile Defense Systems (BMDS) Radars Program. The MDA continues to sustain 12 Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) radars. Five Forward-Based radars at fixed radar sites operate continuously 24 hours a day, 7 days a week, 365 days a year. Seven radars operate in Terminal Mode when integrated with the THAAD battery. The operational tempo is met utilizing military personnel and contractor logistics support (CLS) to operate and maintain the radar. FY 2020 includes AN/TPY-2 operations and maintenance plan and an increase in Depot Level Maintenance for CEU refurbishments due to high optempo corrosive environments.

D. Terminal High Altitude Area Defense (THAAD). Army force structure for THAAD is remains set at seven batteries with six launchers operated by 95 Soldiers. The battery is organized to conduct 120-day deployments (45 days of entry operations and 75 days of 17-hour/day combat operations). During actual deployments, batteries have been operating at a 24 hours a day, 7 days a week, 365 days a year operational tempo, with increased CLS costs. This increased tempo has been sustained through the increase of appropriate attachments and support. Additionally, increasing OCONUS stationing of THAAD Batteries

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**IV. Performance Criteria and Evaluation Summary:**

by the Army drives an increase in costs for deployed contractor support, increased transportation costs for spares/repair parts and increased quantities of stocks to support separate locations that have remote launcher capability.

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<b><u>V. Personnel Summary</u></b>	<b><u>FY 2018</u></b>	<b><u>FY 2019</u></b>	<b><u>FY 2020</u></b>	<b><u>Change FY 2018/ FY 2019</u></b>	<b><u>Change FY 2019/ FY 2020</u></b>
<u>Contractor FTEs (Total)</u>	<u>986</u>	<u>1,067</u>	<u>1,031</u>	<u>81</u>	<u>-36</u>

The FY 2019 to FY 2020 the net decrease in contractor FTEs reflects the following changes:

- A reduction of -40 contractor FTEs in the BMDS Radar Program due to reduced contractor requirements.
- The THAAD Program decrease of -11 contractor FTEs is due to the continued transition from the prime contractor to an organic capability for sustainment and maintenance of THAAD post-deployed system software.
- The decrease of -9 FTEs in Aegis BMD Program is due to the reduction in SM-3 IA/IB recertification, G-switch and TSRM efforts.
- Ground-Based Midcourse Defense Program increases at GMD sites to support added requirements due to missile field expansion and host base increased communications support at Fort Greely, AK, twenty-four hour assured maintenance response capability, and increased cyber defense at GMD sites resulting in an overall increase of +24 FTEs.



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**VI. OP 32 Line Items as Applicable (Dollars in thousands):**

		Change			Change		
<u>OP 32 Line</u>	<u>FY 2018</u>	<u>FY 2018/FY 2019</u>		<u>FY 2019</u>	<u>FY 2019/FY 2020</u>		<u>FY 2020</u>
	<u>Actuals</u>	<u>Price</u>	<u>Program</u>	<u>Enacted</u>	<u>Price</u>	<u>Program</u>	<u>Estimate</u>
308 Travel of Persons	188	3	-191	0	0	220	220
<b>399 Total Travel</b>	<b>188</b>	<b>3</b>	<b>-191</b>	<b>0</b>	<b>0</b>	<b>220</b>	<b>220</b>
401 DLA Energy (Fuel Products)	0	0	700	700	-5	151	846
<b>499 Total Supplies &amp; Materials</b>	<b>0</b>	<b>0</b>	<b>700</b>	<b>700</b>	<b>-5</b>	<b>151</b>	<b>846</b>
677 DISA Telecomm Svcs - Reimbursable	2,425	46	-2,471	0	0	0	0
<b>699 Total DWCF Purchases</b>	<b>2,425</b>	<b>46</b>	<b>-2,471</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
771 Commercial Transport	4,452	80	1,366	5,898	118	-2,421	3,595
<b>799 Total Transportation</b>	<b>4,452</b>	<b>80</b>	<b>1,366</b>	<b>5,898</b>	<b>118</b>	<b>-2,421</b>	<b>3,595</b>
912 Rental Payments to GSA (SLUC)	0	0	253	253	5	-10	248
913 Purchased Utilities (Non-Fund)	2,269	41	24	2,334	47	41	2,422
914 Purchased Communications (Non-Fund)	83	1	666	750	15	1,768	2,533
915 Rents (Non-GSA)	1,226	22	-1,248	0	0	0	0
920 Supplies & Materials (Non-Fund)	31,988	576	11,327	43,891	878	-24,188	20,581
922 Equipment Maintenance By Contract	338,326	6,090	-35,278	309,138	6,183	30,236	345,557
923 Facilities Sust, Rest, & Mod by Contract	35,760	644	-13,406	22,998	460	3,685	27,143
925 Equipment Purchases (Non-Fund)	0	0	3,448	3,448	69	-3,266	251
930 Other Depot Maintenance (Non-Fund)	13,966	251	19,377	33,594	672	44,481	78,747
932 Mgt Prof Support Svcs	1,602	29	-681	950	19	117	1,086
934 Engineering & Tech Svcs	2,137	38	327	2,502	50	900	3,452
937 Locally Purchased Fuel (Non-Fund)	1,250	-5	-1,245	0	0	0	0
984 Equipment Contracts	3,814	69	-3,842	41	1	1,804	1,846
987 Other Intra-Govt Purch	34,131	614	2,105	36,850	737	-13,250	24,337
989 Other Services	9,710	175	-826	9,059	181	-575	8,665
990 IT Contract Support Services	7,852	141	-7,926	67	1	932	1,000
<b>999 Total Other Purchases</b>	<b>484,114</b>	<b>8,686</b>	<b>-26,925</b>	<b>465,875</b>	<b>9,318</b>	<b>42,675</b>	<b>517,868</b>

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		Change			Change		
	FY 2018	<u>FY 2018/FY 2019</u>		FY 2019	<u>FY 2019/FY 2020</u>		FY 2020
<u>OP 32 Line</u>	<u>Actuals</u>	<u>Price</u>	<u>Program</u>	<u>Enacted</u>	<u>Price</u>	<u>Program</u>	<u>Estimate</u>
<b>Total</b>	<b>491,179</b>	<b>8,815</b>	<b>-27,521</b>	<b>472,473</b>	<b>9,431</b>	<b>40,625</b>	<b>522,529</b>

\* OP-32 lines were realigned in FY 2020 to correct classification categories that were inaccurately reported in FY 2019 and more accurately reflect planned expenditures. The following breakout provides further traceability to OP-5 program increases and decreases to their affected OP-32 lines.

-\$18,000 thousand from line 987 Other Intra-Govt Purch was aligned to 930 Depot Maintenance to properly capture items in the right OP-32 line.

-\$15,000 thousand from line 920 Supplies & Materials (Non-Fund) was aligned to 930 Depot Maintenance to properly capture items in the right OP-32 line.

-\$7,000 thousand from line 922 Equipment Maintenance by Contract was aligned to 930 Depot Maintenance to properly capture items in the right OP-32 line.

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**CONTRACT SERVICES FUNDING**  
**(\$ in Millions)**

Line	By PB/OP-32 Inflation Category Code	FY 2018	FY 2019	FY 2019	FY 2020	FY 2020
		Base & OCO	Base	OCO	Base	OCO
		<u>Actual</u>	<u>Request</u>	<u>Request</u>	<u>Request</u>	<u>Request</u>
914	Purchased Communications (Non-Fund)	1	1	0	3	0
	<b>Total 23.1 - Communications, Utilities, and Misc. Charges</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>
932	Mgmt and Professional Support Services	2	1	0	1	0
933	Studies, Analysis, and Evaluation Services	0	0		0	0
934	Engineering and Technical Services	2	3	0	3	0
	<b>Total 25.1 - Advisory and Assistance Services</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>0</b>
989	Other Contracts	10	10	0	9	0
926	Other Overseas Purchases					
	<b>Total 25.2 - Other Services</b>	<b>10</b>	<b>10</b>	<b>0</b>	<b>9</b>	<b>0</b>
987	Other Intra-Government Purchases	34	37	0	24	0
	<b>Total 25.3 - Other Goods and Services from Federal Sources</b>	<b>34</b>	<b>37</b>	<b>0</b>	<b>24</b>	<b>0</b>
923	Facility Maintenance	36	23	0	27	0
	<b>Total 25.4 - Operation and Maintenance of Facilities</b>	<b>36</b>	<b>23</b>	<b>0</b>	<b>27</b>	<b>0</b>
985	Research and Development Contracts					0
	<b>Total 25.5 - Research and Development Contracts</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
922	Equipment Maintenance - Contract	338	309	0	346	0
930	Other Depot Maintenance (Non-Fund)	14	34	0	79	0
990	IT Contract Support Services	8	1	0	1	0
	<b>Total 25.7 - Operation and Maintenance of Equipment</b>	<b>360</b>	<b>344</b>	<b>0</b>	<b>426</b>	<b>0</b>
964	Subsistence Contracts					
	<b>Total 25.8- Subsistence and Support of Persons</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Total</b>	<b>445</b>	<b>419</b>	<b>0</b>	<b>493</b>	<b>0</b>

Source: Program Resources Collection Process as of 3 Jan 2019

Numbers may not add due to rounding

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**Contractor Full-Time Equivalents**

<b>Line</b>	<b>By PB/OP-32 Inflation Category Code</b>	<b>FY 2018 Base &amp; OCO <u>Actual</u></b>	<b>FY 2019 Base <u>Request</u></b>	<b>FY 2019 OCO <u>Request</u></b>	<b>FY 2020 Base <u>Request</u></b>	<b>FY 2020 OCO <u>Request</u></b>
914	Purchased Communications (Non-Fund)	4	4	0	11	0
	<b>Total 23.1 - Communications, Utilities and Misc. Charges</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>11</b>	<b>0</b>
932	Mgmt and Professional Support Services	29	6	0	6	0
933	Studies, Analysis, and Evaluation Services				0	
934	Engineering and Technical Services	27	10		12	
	<b>Total 25.1 - Advisory and Assistance Services</b>	<b>56</b>	<b>16</b>	<b>0</b>	<b>18</b>	<b>0</b>
989	Other Contracts	31	35	0	35	0
926	Other Overseas Purchases					
	<b>Total 25.2 - Other Services</b>	<b>31</b>	<b>35</b>	<b>0</b>	<b>35</b>	<b>0</b>
987	Other Intra-Government Purchases	1	19	0	2	0
	<b>Total 25.3 - Other Goods and Services from Federal Sources</b>	<b>1</b>	<b>19</b>	<b>0</b>	<b>2</b>	<b>0</b>
923	Facility Maintenance	371	94	0	94	0
	<b>Total 25.4 - Operation and Maintenance of Facilities</b>	<b>371</b>	<b>94</b>	<b>0</b>	<b>94</b>	<b>0</b>
985	Research and Development Contracts					
	<b>Total 25.5 - Research and Development Contracts</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
922	Equipment Maintenance - Contract	468	844	0	741	0
930	Other Depot Maintenance (Non-Fund)	23	55		130	
990	IT Contract Support Services	32	0		0	0
	<b>Total 25.7 - Operation and Maintenance of Equipment</b>	<b>523</b>	<b>899</b>	<b>0</b>	<b>871</b>	<b>0</b>
	<b>Total</b>	<b>986</b>	<b>1,067</b>	<b>0</b>	<b>1,031</b>	<b>0</b>

Source: Program Resources Collection Process as of 3 Jan 2019

Numbers may not add due to rounding

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**CONTRACT SERVICES**

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**Defense-Wide Missile Defense Agency**  
**Operation and Maintenance**  
**Justification Narrative**

**Description of Services Financed:**

Provides the following Ballistic Missile Defense (BMD) operations and maintenance support:

A. Aegis BMD. Funding provides a wide range of support activities for deployed Aegis BMD ships and Aegis Ashore facilities including Standard Missile-3 (SM-3) sustainment, BMD Aegis Weapon System (AWS) sustainment, and sustainment for Aegis Ashore sites.

The SM-3 sustainment program includes the recertification/repair of missiles, installation of software and hardware updates, demilitarization of SM-3 missiles, modeling and simulation and logistics efforts. Also provides missile first destination transportation, transportation ballistic barrier maintenance, spares replenishment and operational fleet support.

The BMDS AWS sustainment program provides technical and engineering services for in-service BMD ships and sites, along with infrastructure maintenance for BMDS platforms executing BMD test missions, to ensure the in-service BMD AWS baselines maintain the directed operational availability. BMD AWS sustainment includes: BMD Engineering Agent technical support and operational analysis for BMD units; engineering reach-back services supporting casualty correction, issues, and improvements; maintenance, certification, and delivery of BMD AWS computer program updates to the Fleet; Aegis software maintenance corrections in the common source library; test site infrastructure and maintenance; integrated logistics support of BMD unique parts and technical documentation; review and implementation of updated maintenance concepts;

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diminishing manufacturing sources (DMS) and obsolete materiel surveillance, identification, and resolution; maintenance actions on BMD ships and sites participating in MDA sponsored test missions.

Provides engineering services for Aegis Ashore Host Nation repairs and rework required post construction activities in support of site transition. Includes Host Nation planning yard activities to track modernization, update the Aegis Ashore technical data package to ensure core Aegis Ashore Deckhouse attributes are maintained, development of required test procedures to support on-site installation and checkout (INCO) and system operations verification testing (SOVT) and provides updates to training, warfighter technical publications, and the initial outfitting requirements for maintenance and logistics materiel.

B. Ground-Based Midcourse program reflects increase in sustainment, maintenance and material costs for the new missile field at Fort Greely, AK; 24 hours per day, 7 days per week operations and maintenance assured maintenance response capability throughout GMD sites; and increased cyber defense posture and cyber threat awareness at GMD sites. Growth additionally reflects increase in host base communications support at Fort Greely, AK to address current limited support and obsolescence issues while enhancing communications infrastructure, outside and inside plant installation support, maintenance, and repair as well as increased telephone support.

C. Ballistic Missile Defense System (BMDS) AN/TPY-2 Radars. Sustainment of 12 Army Navy/Transportable Radar Surveillance and Control-2 (AN/TPY-2) Forward-Based and Terminal High Altitude Area Defense (THAAD) configured Terminal Mode radars to include supply support, repair, maintenance, modernization, transportation, parts, storage, special tools and test equipment, recurring and delta training, technical interface, training device maintenance, engineering support, interactive electronic technical manual (IETM) updates, software user guide updates, software revision certification, and depot-level maintenance for missile defense unique equipment. Funding also provides Electronic Equipment Unit (EEU) retrofits at Letterkenny Army Depot to replace obsolete equipment, incorporate updates to upgrade servers, and enhance radar capabilities. Additionally, funding provides sustainment unique to the Missile Defense mission for the Upgraded Early Warning Radar (UEWR)/COBRA DANE Radar, which MDA sustains and operates in conjunction with the U.S. Air Force.

D. Terminal High Altitude Area Defense (THAAD). MDA is responsible for the sustainment of the THAAD missile defense unique or developmental items, while the U. S. Army is responsible for the operations and sustainment of the common items. Funding provides sustainment for all fielded THAAD Batteries, ensures

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THAAD assets are properly maintained and crews are trained to meet Combatant Commanders needs including:

- 1.) Field and sustainment level supply, maintenance, modernization, hazardous materials/waste disposal, and depot-level maintenance for THAAD missile defense unique equipment.
- 2.) Spares, Interceptor spares, repair parts, and maintenance capability at the location of each THAAD battery.
- 3.) Engineering support for the THAAD missile defense unique equipment.
- 4.) Deployment software support for fielded software, to include deficiency report review, error correction, incremental capability improvements, and hardware/systems interface compatibility maintenance.
- 5.) Missile transportation and handling from the missile storage location to the site of the THAAD launchers.
- 6.) IETM updates software users' guide updates, and software revision certification.
- 7.) Maintenance and upkeep for all THAAD training devices.
- 8.) Supply, maintenance and transportation support for all new equipment training, and sustainment training relating to design changes and equipment upgrades.
- 9.) Special Tools and Test Equipment for the organic depot.

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**Reporting Limitations:**

N/A

**Summary of Increases/Decreases:**

A. AEGIS Program funding provides: 1. Increase for Transition of non-developmental engineering site costs and Common Source Library (CSL) Software Maintenance from RDT&E funding to O&M for the lifecycle sustainment services of BMDS mission specific equipment. 2. Decrease for reduction of SM-3 Block IA/B's recertification's from 79 in FY 2019 to 32 in FY 2020 due to Navy Fleet Forces Command changes in ship and missile availability in support of fleet requirements. 3. Decrease for the reduction of rounds being returned for recertification which also generates a corresponding reduction in G-switch replacement and Third Stage Rocket Motor (TSRM) nozzle replacement repairs that are performed during missile recertification 4. Decrease for a delay in the planned FY 2018 completion of the Poland Military Construction project to stand up the Aegis Ashore Commission System which is now planned for completion in FY 2020.

B. Ground-Based Midcourse program increase provides sustainment, maintenance and material for the new missile field at Fort Greely, AK; 24 hours per day, 7 days per week operations and maintenance assured maintenance response capability throughout GMD sites; and increase cyber defense posture and cyber threat awareness at GMD sites. Growth additionally reflects increase in host base communications support at Fort Greely, AK to address current limited support and obsolescence issues while enhancing communications infrastructure, outside and inside plant installation support, maintenance, and repair as well as increased telephone support. The GM Program has fewer operational weapons system material purchases in FY 2020.



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C. Ballistic Missile Defense Systems (BMDS) Radars program growth reflects an increase to the Cooling Equipment Unit (CEU) depot-level maintenance refurbishment schedule required to restore equipment used in high-op tempo corrosive environment.

D. THAAD program growth provides: 1. Post Deployment Software Support to sustain multiple deployed software (S/W) builds. 2. The purchase of test program sets (TPS) to establish the capability to repair and maintain depot level reparable (DLR) at Letterkenny Army Depot that were previously tested at a prime contractor facility. 3. Increased sustainment costs for the planned transition from three to four deployed OCONUS batteries. 4. Increased sustainment costs due to implementation and fielding of remote launcher capability. 5. The purchase of interceptor spare components for quick repair and return of interceptors to the field.

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<u>Appropriation/Fund</u>	<u>FY 2018</u> <u>Actuals</u>	<u>FY 2019</u> <u>Enacted</u>	<u>FY 2020</u> <u>Estimate</u>
I. Management & Professional Support Services			
FFRDC Work	480	285	305
Non-FFRDC Work	<u>1,122</u>	<u>665</u>	<u>781</u>
Subtotal	1,602	950	1,086
II. Studies, Analysis & Evaluations			
FFRDC Work	0	0	0
Non-FFRDC Work	<u>0</u>	<u>0</u>	<u>0</u>
Subtotal	0	0	0
III. Engineering & Technical Services			
FFRDC Work	1,128	1,321	1,790
Non-FFRDC Work	<u>1,009</u>	<u>1,181</u>	<u>1,662</u>
Subtotal	2,137	2,502	3,452
TOTAL			
<b>FFRDC Work</b>	<b>1,608</b>	<b>1,606</b>	<b>2,095</b>
<b>Non-FFRDC Work</b>	<b>2,131</b>	<b>1,846</b>	<b>2,443</b>
Reimbursable	0	0	0

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**Explanation of Funding Changes (FY 2018 to FY 2019):**

The FY 2018 to FY 2019 changes reflects less software maintenance requirements in FY 2019 based on the accelerated certifications of Aegis BMD 4.1.

**Explanation of Funding Changes (FY 2019 to FY 2020):**

The Ground-based Midcourse Defense Program provides an increase in Management and Support Services to perform independent assessment of GMD system manuals and processes as well as an increase in Warfighter interface and engagement assistance. Aegis BMD Program increase reflects realignment of Depot Maintenance efforts to 934 Engineering & Technical Services.

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Missile Defense Agency

(Dollars in Thousands)

Appropriation/Fund: RDT&E (0400)		<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
1. Management & Professional Support Services				
FFRDC Work	932	15,983	7,825	9,915
Non-FFRDC Work	932	<u>482,804</u>	<u>253,019</u>	<u>320,583</u>
Sub-Total		498,787	260,844	330,498
2. Studies, Analysis & Evaluations				
FFRDC Work	933	16,343	13,020	9,140
Non-FFRDC Work	933	<u>31,410</u>	<u>25,275</u>	<u>18,557</u>
Sub-Total		47,753	38,295	27,697
3. Engineering & Technical Services				
FFRDC Work	934	46,184	58,847	2,125
Non-FFRDC Work	934	<u>60,527</u>	<u>77,121</u>	<u>100,961</u>
Sub-Total		106,711	135,968	103,086
<b>TOTAL</b>		<b>653,251</b>	<b>435,107</b>	<b>461,281</b>
<b>FFRDC Work</b>		<b>78,510</b>	<b>79,692</b>	<b>21,180</b>
<b>Non-FFRDC Work</b>		<b>574,741</b>	<b>355,415</b>	<b>440,101</b>

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MISSILE DEFENSE AGENCY  
Operation and Maintenance, Defense-Wide  
Fiscal Year (FY) 2020 President's Budget

MISSILE DEFENSE AGENCY

	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Foreign National Indirect Hire</u>	<u>Total</u>
1. FY 2018 FTEs	0	0	0	0
2. FY 2019 FTEs	0	0	0	0
3. FY 2020 FTEs	0	0	0	0

MDA - Operation and Maintenance (O&M)

	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Foreign National Indirect Hire</u>	<u>Total</u>
1. FY 2018 FTEs	0	0	0	0
2. FY 2019 FTEs	0	0	0	0
3. FY 2020 FTEs	0	0	0	0

MDA - Research, Development, Test and Evaluation (RDT&E)

	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Foreign National Indirect Hire</u>	<u>Total</u>
1. FY 2018 FTEs	0	0	0	0
2. FY 2019 FTEs	0	0	0	0
3. FY 2020 FTEs	0	0	0	0

MDA - Defense Working Capital Fund (DWCF)

	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Foreign National Indirect Hire</u>	<u>Total</u>
1. FY 2018 FTEs	0	0	0	0
2. FY 2019 FTEs	0	0	0	0
3. FY 2020 FTEs	0	0	0	0

4. SUMMARY

FY 2018

	<u>US Direct Hire</u>	<u>Direct Hire</u>	<u>Foreign National Indirect Hire</u>	<u>Total</u>
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**MISSILE DEFENSE AGENCY**  
**Operation and Maintenance, Defense-Wide**  
**Fiscal Year (FY) 2020 President's Budget**

RDT&E Total	2,283	0	0	2,283
Direct Funded	2,283	0	0	2,283
Reimbursable Funded	0	0	0	0
Total Component	2,283	0	0	2,283
Direct Funded	2,283	0	0	2,283
Reimbursable Funded	0	0	0	0
<b>FY 2019</b>				
RDT&E Total	2,278	0	0	2,278
Direct Funded	2,278	0	0	2,278
Reimbursable Funded	0	0	0	0
Total Component	2,278	0	0	2,278
Direct Funded	2,278	0	0	2,278
Reimbursable Funded	0	0	0	0
<b>FY 2020</b>				
RDT&E Total	2,183	0	0	2,183
Direct Funded	2,183	0	0	2,183
Reimbursable Funded	0	0	0	0
Total Component	2,183	0	0	2,183
Direct Funded	2,183	0	0	2,183
Reimbursable Funded	0	0	0	0



**MISSILE DEFENSE AGENCY**  
**Operation and Maintenance, Defense-Wide**  
**Fiscal Year (FY) 2020 President's Budget**

**5. SUMMARY OF CHANGES**

Research, Development, Test and Evaluation (RDT&E)

**Change from FY 2018 to FY 2019:**

MDA's total reflects the continuation of the 20% Management HQ Funding and OSD Comptroller Issue No: MP-015 Reduction for Travel Efficiencies through 2019. MDA's phased implementation will continue through FY 2019, consistent with the plan approved by the office of the Deputy Management Officer (DCMO). RMD 700A2 Issue OPS-014 Financial Improvement and Audit Readiness Manpower Reallocation. Action transfers 1 civilian FTE with funding from WHS to MDA to meet audit readiness goals within established timelines.

**Change from FY 2019 to FY 2020:**

MDA's direct RDT&E funded FTE reflects the continued implementation of the Management Headquarter Activity (MHA) reductions. MDA's phased implementation will continue through FY 2020, consistent with the plan approved by the office of the Deputy Management Officer (DCMO).

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**Missile Defense Agency Depot Maintenance Program**  
(\$ in Thousands)

	Method of Accomplishment	Weapon System	FY 2018	FY 2019	FY 2020
<b>Operation and Maintenance Funding</b>					
	Contractor Logistics Support (CLS)	AN/TPY-2 Radar	59,108	55,246	59,526
		Ballistic Missile Defense	22,012	19,763	28,497
		Standard Missile-3	35,564	37,711	26,878
		THAAD	11,709	22,915	28,987
	Contractor Logistics Support (CLS) Total		128,393	135,635	143,888
	Interim Contract Support (ICS)	THAAD	-	-	-
	Interim Contract Support (ICS) Total		-	-	-
	Inter-Service	Standard Missile-3	278	259	180
		THAAD	165	6,180	9,170
	Inter-Service Total		443	6,439	9,350
	Organic	Ballistic Missile Defense	5,305	5,541	7,990
		Standard Missile-3	5,481	10,685	9,622
		THAAD	2,135	84	3,428
	Organic Total		12,921	16,310	21,040
		THAAD	16,600	12,563	10,299
	Other Contract Total		16,600	12,563	10,299
<b>Total Operation and Maintenance Funding</b>			<b>158,357</b>	<b>170,947</b>	<b>184,577</b>
<b>Procurement Funding</b>					
	Interim Contractor Support (ICS)	THAAD	-	-	-
	Interim Contractor Support (ICS) Total		-	-	-
	Other Contract	AN/TPY-2 Radar	947	5,397	3,296
	Other Contract Total		947	5,397	3,296
<b>Total Procurement Funding</b>			<b>947</b>	<b>5,397</b>	<b>3,296</b>
<b>Research, Development, Test and Evaluation Funding</b>					
	Contractor Logistics Support (CLS)	Ballistic Missile Defense	489	-	-
	Contractor Logistics Support (CLS) Total		489	-	-
	Organic	Ballistic Missile Defense	150	-	-
	Organic Total		150	-	-
	Other Contract	AN/TPY-2 Radar	80,089	81,070	81,590
		THAAD	-	-	-
	Other Contract Total		80,089	81,070	81,590
<b>Total Research, Development, Test and Evaluation Funding</b>			<b>80,727</b>	<b>81,070</b>	<b>81,590</b>
<b>Total MDA Depot Maintenance Program</b>			<b>240,031</b>	<b>257,414</b>	<b>269,463</b>

NOTE: The funding in each fiscal year represents both the required and funded amounts for that program.

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