# ARMY WORKING CAPITAL FUND
# FISCAL YEAR 2022
# BUDGET ESTIMATES

SUBMITTED TO CONGRESS MAY 2021

Front Cover Photograph:

A Soldier provides guidance and direction while participating in a training demonstration.

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A soldier sits on the ramp of a CH-47 Chinook

**The estimated cost of this report for the Department of Defense (DOD) is approximately $63,136 for Fiscal Year 2021. This includes $926 in expenses and $62,210 in DOD labor.**

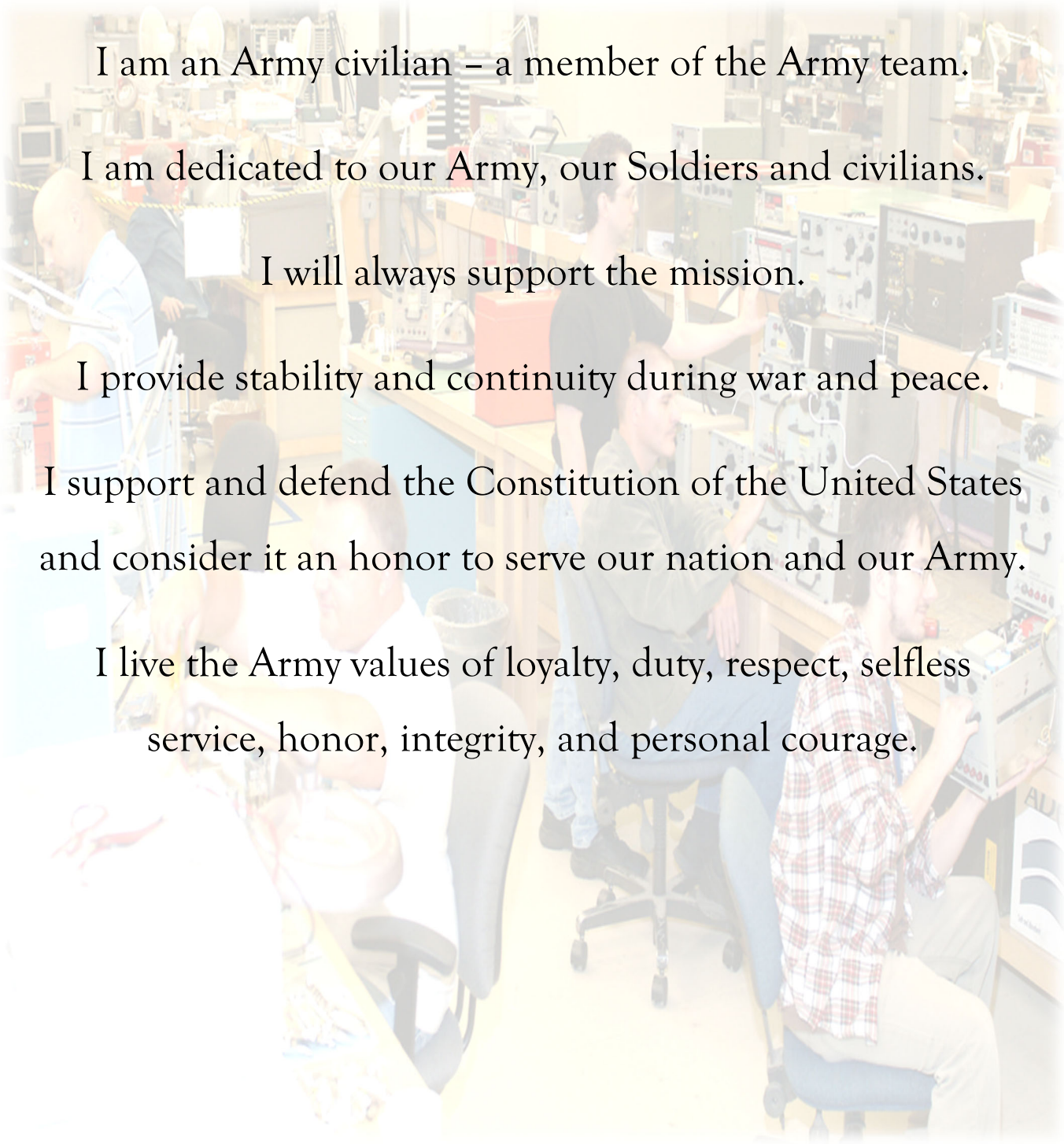
**All photographs in this document were obtained from official U.S. Department of Defense web sites.**

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).

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

U.S.ARMY

# Army Civilian Corps Creed



I am an Army civilian – a member of the Army team.

I am dedicated to our Army, our Soldiers and civilians.

I will always support the mission.

I provide stability and continuity during war and peace.

I support and defend the Constitution of the United States and consider it an honor to serve our nation and our Army.

I live the Army values of loyalty, duty, respect, selfless service, honor, integrity, and personal courage.

# Army Overview

# Background

Working capital funds were established by Congress to more effectively control and account for the cost of programs and work performed in the Department of Defense. Under the provisions of Title 10 United States Code, § 2208, the Secretary of Defense may establish working capital funds to finance inventories of supplies and industrial-type activities that provide common services such as repair, manufacturing, or remanufacturing. Unlike profit-oriented commercial businesses, the revolving fund's goal is to break even by returning any monetary gains to appropriated fund customers through lower rates or collecting any monetary losses from customers through higher rates. Revolving fund prices are generally stabilized or fixed during the year of execution to protect customers from unforeseen fluctuations that would impact their ability to execute the programs approved by Congress.

The basic tenet of the revolving fund structure is to create a customer-provider relationship between military operating units and support organizations. This relationship is designed to make managers of the Army Working Capital Fund (AWCF) and decision-makers at all levels more aware of costs for goods and services.

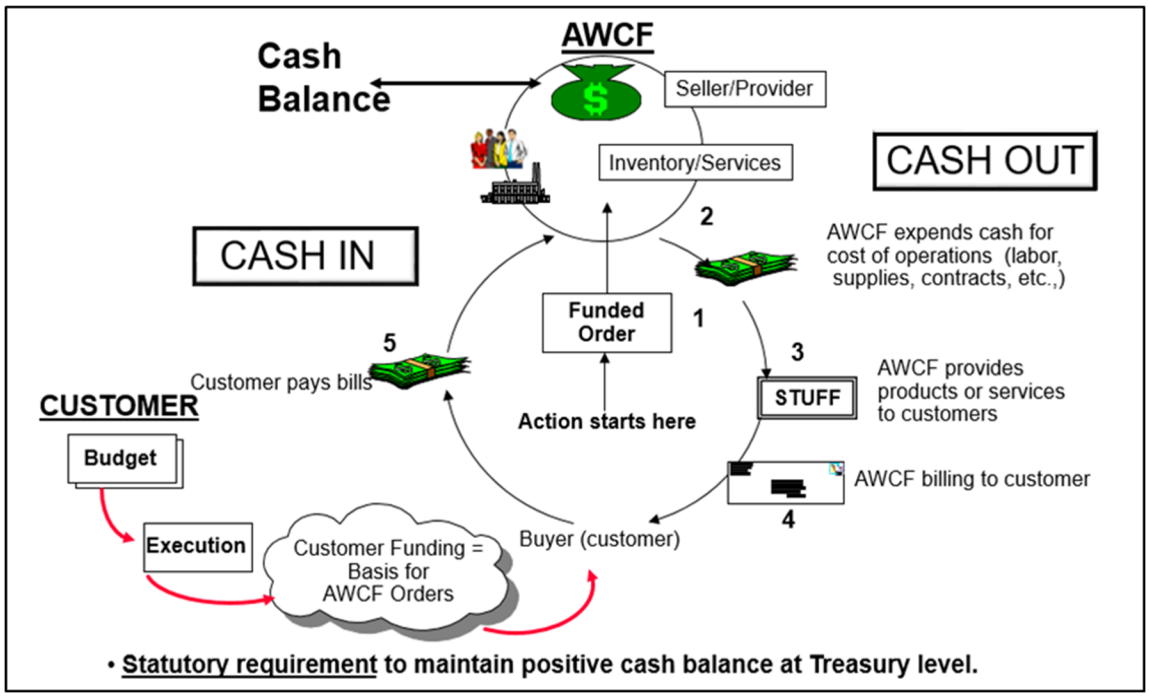
Soldiers conduct a simulated air assault from an Army CH-47 Chinook during training event

The Army's revolving fund activities evolved from two separate types of funds. The first type, known as the Stock Fund, procured spare parts in volume to either sell to customers or hold in inventory. The second type, known as the Industrial Fund, provided industrial services to customers, such as depot maintenance, munitions and weapon systems component manufacturing, and ammunition storage. Both types of revolving funds were financed primarily by reimbursements from customer appropriated accounts.

Figure 1 on the next page shows the interaction between customers' appropriated funds, AWCF business operations, and cash. Customer appropriated funding is synchronized with AWCF workload forecasts during

budget development. During the year of execution, appropriated fund customers submit funded orders (1) to AWCF providers requesting services (repair, overhaul, or manufacturing) or supplies (spare or repair parts). This obligates appropriated funds. In step 2, AWCF Supply Management purchases inventory for resale to customers. Also in step 2, Industrial Operations orders materiel and hires labor, supporting the projected workload (CASH OUT). In step 3, the customer receives the completed product or service and a bill (4) for payment. The customer pays the AWCF (5) for the materiel or services (CASH IN). Proper pricing of inventory and services, and accurately forecasting workload allows a balance between CASH OUT and CASH IN. Variance between these actions results in either a gain or loss of AWCF cash. Gains are returned to customers through lower future prices while losses are recouped through higher future prices.

Figure 1 - AWCF Cash Process



# Introduction

The FY 2022 AWCF budget is aligned with the Interim National Security Strategic Guidance and supports the Army's vision to provide U.S. land forces with readiness and lethality, enabling the Army to compete, deter, and defeat any adversary. The AWCF provides materiel readiness to operating units and supports Army's revised training strategy and the Regionally Aligned Readiness and Modernization Model (ReARMM).

The revolving fund structure encourages cost-effectiveness, flexibility, and adaptability to meet changing workload requirements in the year of execution. It also supports full cost visibility and full cost recovery while protecting appropriated fund customer accounts from year of execution price changes. The AWCF consists of the Supply Management and Industrial Operations activity groups, with operations spanning across 17 cities and local areas within 14 states. The exact locations are shown in each business activity's portion of the budget. The AWCF activities disbursed approximately $12.9 billion in FY 2020 to maintain the readiness and sustainability of military equipment.

# Performance Measures

Key financial measures are net operating result, accumulated operating result, and unit cost.

UH-60 crews rehearse emergency patient movements

The net operating result (NOR) represents the difference between revenue and expenses within a fiscal year. Accumulated operating result (AOR) represents the summation of all operating gains or losses since activity group inception along with any prior period adjustments. Prices and rates are set at a level that brings the accumulated gains and losses to zero over the budget cycle. The unit cost is a metric primarily used in the Supply Management activity group to relate operating costs to each dollar of sales. It is measured by dividing gross operating cost (the sum of total obligations, depreciation expense, and credit) by gross sales. Adjusting the unit cost determines how much obligation authority may be distributed based on gross sales.

In addition to financial measures (NOR, AOR, and unit cost), operational measures assess how well the financial inputs reflected in the AWCF budget support Army strategic goals and operational readiness. Operational measures include productive yield (an indicator of whether direct labor employees can support projected workload) and stock availability (a measure of the ability of AWCF inventory to fill a customer's requisition). These are identified within each activity group's narrative.

# Logistics Modernization Program

The Army's Logistics Modernization Program (LMP) provides a modernized logistics and finance solution that allows the U.S. Army Materiel Command (AMC) to provide world-class logistics readiness to Soldiers. LMP delivers a fully integrated suite of software and business processes, providing streamlined data on maintenance, repair and overhaul, finance, acquisition, spare parts, and materiel. It is the Army's core logistics information technology (IT) initiative, which meets the Army's IT logistics vision of transformation from legacy applications to a modernized logistics enterprise solution.

LMP manages approximately seven million transactions daily and is integrated with more than 80 DOD systems including interfaces with Army's other enterprise resource planning systems: Army Enterprise Systems Integration Program; Global Combat Support System-Army; and General Fund Enterprise Business Systems. LMP is currently used by more than 23,000 users at more than 50 Army and DOD locations. Enhancements and system changes continue to be applied to LMP to ensure compliance with statutory and regulatory requirements.

Modified Bradley Fighting Vehicles and modified M113 tracked armored personnel carriers participate in training exercise

# Activity Groups

## Supply Management

The Supply Management activity group buys and manages spare and repair parts for sale to its customers, primarily Army operating units. The activity group is committed to supporting and building readiness for present and future challenges. The Army's equipment and operational readiness, and the strength to win the Nation's wars, are directly linked to the availability of spare parts. Supply Management administers spare parts inventory for Army managed items, Non-Army managed items (NAMI) and war reserve secondary items (WRSI). It also maintains a protected inventory of spares in Army Prepositioned Stocks (APS), which is released to support deploying combat units. The Life Cycle Management Commands assigned to the Army Materiel Command manages the Supply Management activity, which consists of four major commodity groups: aviation and missile; communications-electronics; tank-automotive and armament; and NAMI. The war reserve stocks contain materiel from all commodity groups. As new equipment is added to the Army's operational and training forces, new spare parts are also scheduled for inclusion in the Supply Management inventory.

## Industrial Operations

The Industrial Operations activity group provides the Army an organic industrial capability to: conduct depot level maintenance, repair and upgrade; produce munitions and large caliber weapons; and store, maintain, and demilitarize materiel for all branches of DOD. Industrial Operations is comprised of 13 government owned and operated installation activities, each with unique core competencies. These include five hard-iron maintenance depots, three arsenals, two munitions production facilities, and three storage sites. Although comprised of diverse organic industrial capabilities, the preponderance of workload and associated estimates in the Industrial Operations budget submission relate to depot level maintenance, repair, and upgrade. The complex operational environment continues to place tremendous demands on equipment, resulting in higher usage rates than in routine peacetime

M1 Abrams tank participating in live-fire training exercise

operations. The Industrial Operations activities play an integral role in resetting equipment as it retrogrades from combat operations.

The Army's equipment Reset program is defined as a set of actions restoring equipment to a level of pre-deployment capability commensurate with a unit's future mission. Army equipment reset will replace[1], recapitalize[2], or repair[3] equipment to meet 10/20 maintenance standards and operational requirements. The Industrial Operations activity group is involved with both the recapitalization and repair efforts. The budget incorporates depot workload assumptions associated with the Reset program (Direct War and Enduring Operations funding) and peacetime training operations.

# Budget Highlights

## Overview

The FY 2022 budget represents a business plan that supports Soldier and weapon systems readiness for both peacetime training and wartime operating requirements. The AWCF budget supports the Army's plans to maintain and strengthen unit readiness. The Army's training objective in FY 2022 continues restoration of core capabilities and balances operational capability and flexibility across the Army to meet the Interim National Security Strategic Guidance. The Army resources all active component ground units to conduct Decisive Action training and achieve the highest training readiness levels attainable based on available resources.

In FY 2020, COVID-19 significantly impacted the AWCF cash balance due to reduced training, decreased worldwide operations, and reduced efficiency of depot operations. Army estimates total cash losses associated with COVID-19 have exceeded $1.6 billion. The Army offset a portion of FY 2020 losses through the request and receipt of a $592 million cash reprogramming action in September 2020 and continues to implement internal cash mitigation actions to improve the AWCF cash posture. AWCF cash remains a significant concern

[1] The purchase of new equipment to replace battle losses, worn-out or obsolete equipment, and critical equipment deployed and left in theater, but needed for homeland defense, homeland security, and other critical missions.

[2] A rebuild effort that extends the equipment's useful life by returning it to a near zero-mile/zero-hour condition with either the original performance specifications or with upgraded performance specifications.

[3] A repair or overhaul effort that returns the equipment's condition to the Army standard. It includes the Special Technical Inspection and Repair (STIR) program for aircraft.

through FY 2022, as Army is projecting continued modified demand activity from reduced Direct War requirements, Army's revised training strategy, and lingering COVID-19 effects. The budget plan implements cash mitigation actions to maintain cash solvency and increase cash above the lower operational requirement by the end of FY 2022.

The predictability of resources is critical for accurately forecasting and executing workload. OPTEMPO assumptions assist in the development of the budget request, but as changes to these assumptions materialize, the projections for the AWCF can change significantly. To offset this risk, both activity groups must adapt to changing workload forecasts, constraining or expanding costs as necessary. Supply Management's planned Contract Authority in FY 2021 and FY 2022 is significantly less than it has been over the past several years, primarily to improve the future AWCF cash position by reducing future disbursements. Supply Management had purchased additional inventory to support growth in readiness and continued support to Direct War and Enduring Operations costs. With reductions in demands due to COVID-19 and reduced Direct War and Enduring Operations costs, the current inventory balance and materiel dues-in will be able to mitigate stock availability issues through FY 2022 even with planned reductions to contract authority. The Supply Management budget request also includes variability target to support spares replacement in the event of a surge in customer demands above projected levels. The Industrial Operations activity group budget request includes a mix of permanent, temporary, and term-appointment employees, in addition to contract labor, to better respond to unanticipated increases or decreases in new orders.

# Personnel

The AWCF civilian personnel posture reflects an overall decrease in FY 2022 end strength. Changes to personnel levels are discussed within the narrative of each activity group. Civilian and military end strength and civilian full time equivalents are shown in the following table.

Table 1 - Personnel

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| **Supply Management** | | | |
| *Civilian End Strength* | 1,954 | 2,068 | 2,126 |
| *Full Time Equivalents* | 1,954 | 2,068 | 2,126 |
| *Military End Strength* | 2 | 2 | 2 |
| | | | |
| **Industrial Operations** | | | |
| *Civilian End Strength* | 20,114 | 20,260 | 20,182 |
| *Full Time Equivalents* | 19,948 | 20,234 | 20,146 |
| *Military End Strength* | 26 | 25 | 25 |
| | | | |
| **Total** | | | |
| *Civilian End Strength* | 22,068 | 22,328 | 22,308 |
| *Full Time Equivalents* | 21,902 | 22,302 | 22,272 |
| *Military End Strength* | 28 | 27 | 27 |

# Revenue and Expenses

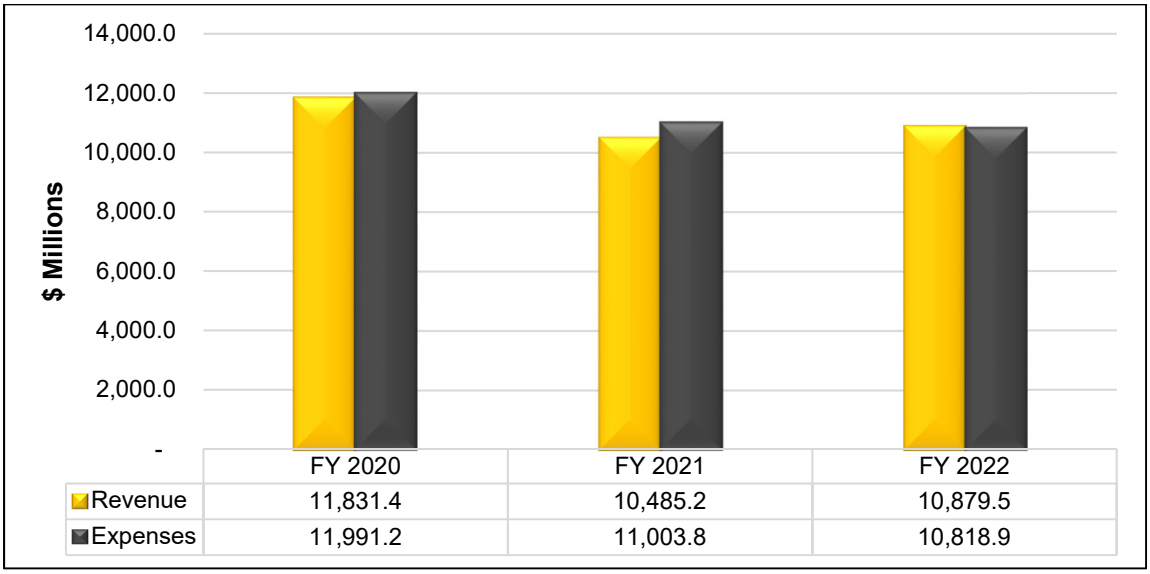
Revenue is an indicator of the combined volume of work completed by the AWCF activity groups. Expenses identify the cost of goods and services produced or sold. Revenue is expected to increase in the budget year, primarily associated with Industrial Operations and Supply Management rate increases, while expenses are expected to decrease. Major expense drivers include cost of goods sold for Supply Management and the cost of labor and materiel consumed in Industrial Operations. Table 2 and Chart 1 show revenue and expenses for Supply Management and Industrial Operations.

Table 2 - Revenue and Expenses

| ($ Millions) | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| **Revenue** | | | |
| *Supply Management* | | | |
| *Gross Sales* | 8,855.6 | 7,200.0 | 7,364.9 |
| *Less Credit* | 1,964.7 | 1,067.5 | 1,004.0 |
| *Net Supply Management* | 6,891.0 | 6,132.5 | 6,360.9 |
| *Industrial Operations* | 4,940.4 | 4,352.7 | 4,518.6 |
| *Total Revenue* | 11,831.4 | 10,485.2 | 10,879.5 |
| | | | |
| **Expenses** | | | |
| *Supply Management* | 7,021.1 | 6,271.7 | 6,115.7 |
| *Industrial Operations* | 4,970.1 | 4,732.1 | 4,703.2 |
| *Total Expenses* | 11,991.2 | 11,003.8 | 10,818.9 |

Note: Total revenue above does not include appropriated funds as shown on the Supply Management Exhibit Fund 14, *Revenue and Costs*. Numbers may not add due to rounding.

Chart 1 - Revenue and Expenses




# Net and Accumulated Operating Results

Financial performance is measured by comparing actual results to goals. The goal of the AWCF is to break even over time. Army considers several factors when determining the accumulated operating result (AOR) amount to return in the rates. Returning a large positive AOR balance in one year may cause the rates to drop significantly in that year and increase significantly in the following year. In addition, the Army reviews the cash balance and the projected balance for the budget year to determine if sufficient cash exists to return the gain to the customers. In FY 2022, a Supply Management activity rate increase will drive a

positive Net Operating Result. The Industrial Operations activity will end FY 2022 with a zero AOR. Table 3 shows the net and accumulated operating results for both Supply Management and Industrial Operations. Details can be found under the NOR and AOR section for each business area.

Table 3 - Operating Results

| ($ Millions) | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| **Supply Management** | | | |
| *Net Operating Result* | (118.6) | (139.3) | 245.2 |
| *Prior Year AOR* | 12.6 | (106.0) | (245.2) |
| *Accumulated Operating Result* | (106.0) | (245.2) | 0.0 |
| | | | |
| **Industrial Operations** | | | |
| *Net Operating Result* | 62.8 | (328.0) | (128.3) |
| *Accumulated Operating Result* | 456.3 | 128.3 | 0.0 |

*Note: Numbers may not add due to rounding*

# Customer Rates

Each activity group has a unique rate structure. The Supply Management activity group adds a cost recovery rate (CRR) to the price of inventory items sold to recoup operating costs. Typical cost categories within the CRR include civilian pay, distribution depot costs, transportation costs, other Defense bills associated with supply operations, and costs of replacing inventory losses. The Industrial Operations activity group sets customer rates on a direct labor hour basis. The hourly composite rate recovers all costs, both direct and overhead. Activity group rates are stabilized so that the customer's buying power is protected from price swings during the year of execution. Both business areas are increasing rates in FY 2022 to increase AWCF cash. Table 4 shows the Supply Management composite cost recovery rates and the Industrial Operations composite direct labor hour rates.

Table 4 - Customer Rates

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| **Supply Management** | 11.0% | 15.6% | 23.4% |
| **Industrial Operations** | $155.28 | $155.28 | $169.89 |

# Customer Rate Change

The Supply Management customer rate change is expressed as the change in overhead costs weighted by sales revenue. Table 5 shows the customer rate change for both business areas.

Table 5 - Price Change to Customer

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| **Supply Management** | (0.1%) | 4.1% | 8.1% |
| **Industrial Operations** | 0.0% | 0.0% | 9.4% |

# Fund Balance with Treasury

The Defense Working Capital Fund (DWCF) Fund Balance with Treasury, account symbol 97X4930, is subdivided at the Treasury into five sub-numbered Treasury accounts. The Army's account is 97X4930.001. The current balance of funds with Treasury is equal to the amount at the beginning of the fiscal year plus the cumulative fiscal-year-to-date amounts of collections, appropriations, and transfers-in minus the cumulative fiscal-year-to-date amounts of disbursements, withdrawals, and transfers-out. The AWCF is required to maintain a positive cash balance to prevent an Anti-deficiency Act violation under Title 31, United States Code, § 1517(a), *Prohibited obligations and expenditures*. Unlike appropriated funds, the AWCF cash balance is not equal to outstanding obligations. Cash on hand at Treasury must be sufficient to pay bills when due and should remain sufficient to support operational requirements plus six months of capital investment program disbursements.

The operational requirement may include any positive accumulative operating result returned to customers, cash equal to undisbursed direct appropriations, and a commodity/market adjustment. In preparation for daily cash visibility at the Department of Treasury, Army studied weekday cash transactions from the Logistics Modernization Program (LMP). This study identified a pattern of multiple disbursement cycles before a collection cycle. The operational cash requirement also includes risk mitigation factors to ensure sufficient cash is available for these cycles.

The cash balance is primarily affected by cash generated from operations but the balance is also impacted by appropriations, transfers, and withdrawals. Maintaining a proper cash balance is dependent on setting rates to recover full costs, including prior year losses, and accurately projecting workload.

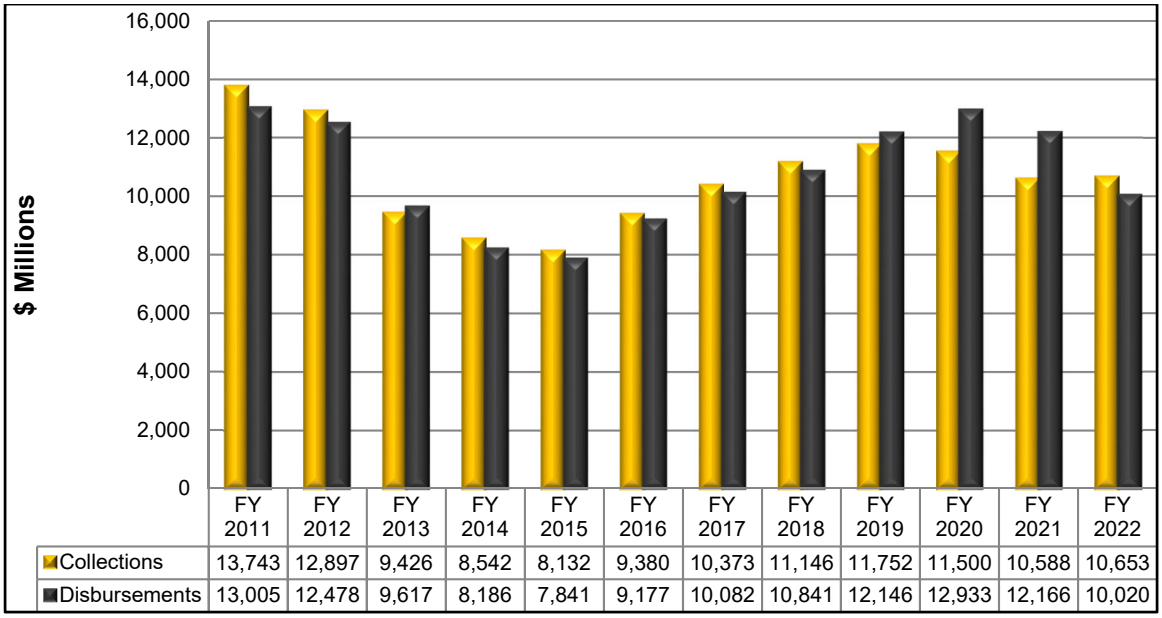
AWCF cash remains a concern through FY 2022 as Army is projecting continued modified demand activity from reduced Direct War requirements, Army's revised

training strategy, and lingering COVID-19 effects. The budget plan implements cash mitigation actions to maintain cash solvency and increase cash above the lower operational requirement by the end of FY 2022.

# Cash from Operations

The day-to-day operation of the fund consumes cash with disbursements and replenishes cash with collections. The FY 2022 cash plan includes all expected collections and disbursements from the operation of both the Supply Management and Industrial Operation activity groups, including appropriations and transfers. COVID-19 significantly impacted the AWCF cash balance due to reduced training, decreased worldwide operations, and reduced efficiency of depot operations. Army estimates total operational cash losses associated with COVID-19 have exceeded $1.6 billion. The Army has executed a number of internal cash mitigation actions to increase cash collections and reduce disbursements. Both business areas have increased rates and prices for FY 2022 which have increased projected collections. The cash plan accounts for the restriction of supply turn-in credits, which will increase net sales and increase planned collections. The Army's cash plan also accounts for steep reductions in Supply Management contract authority in FY 2021 and FY 2022, reducing current and future disbursements. Chart 2 displays collections and disbursements from operations; however, it does not include receipt of appropriations or transfers.

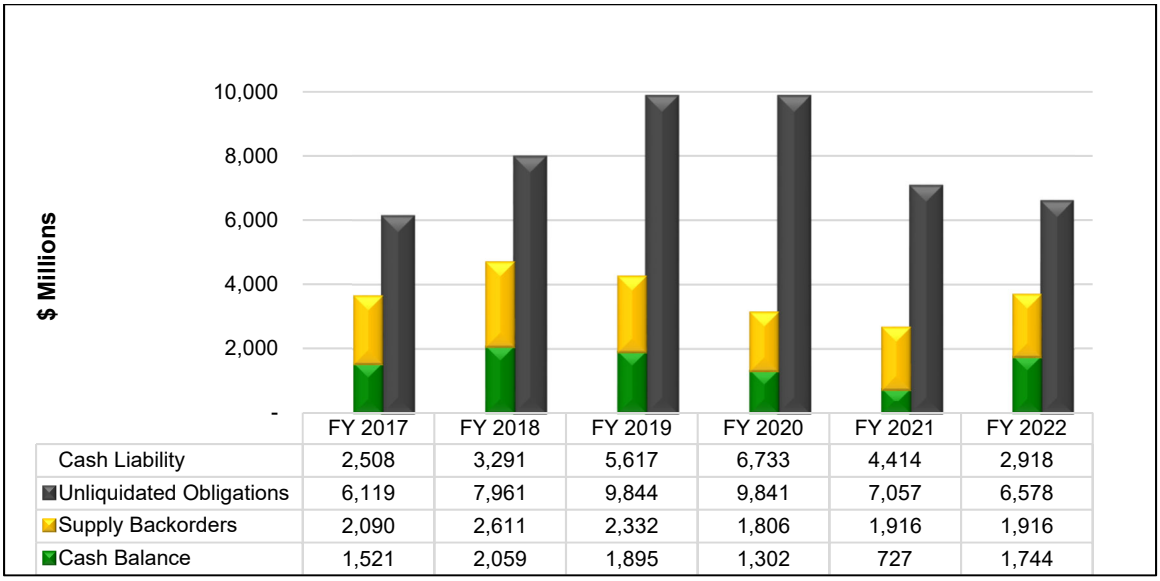
Chart 2 - Cash from Operations




| | FY 2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 | FY 2017 | FY 2018 | FY 2019 | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Collections | 13,743 | 12,897 | 9,426 | 8,542 | 8,132 | 9,380 | 10,373 | 11,146 | 11,752 | 11,500 | 10,588 | 10,653 |
| Disbursements | 13,005 | 12,478 | 9,617 | 8,186 | 7,841 | 9,177 | 10,082 | 10,841 | 12,146 | 12,933 | 12,166 | 10,020 |

Chart 3 displays the potential risk to the AWCF cash balance through FY 2022 due to unliquidated obligations (ULOs). ULOs represent the dollar value of material and services ordered but not yet received by the AWCF. ULOs will result in future disbursements, reducing cash. There is increased risk to cash when ULOs are high even though collections from backorders mitigate a portion of this risk. Fund managers must maintain a sufficient cash balance to cover future disbursements as the material and services are delivered. The AWCF experienced a large increase to ULOs from FY 2017 through FY 2020 due to significant increases in material obligations supporting the Army's readiness objectives. While projected ULOs for FY 2022 remain high, steep reductions to Supply Management obligations in FY 2021 and FY 2022 have reduced Army's projected ULOs from their high in FY 2020.

Chart 3 – Cash Liability




| | FY 2017 | FY 2018 | FY 2019 | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|---|---|---|
| Cash Liability | 2,508 | 3,291 | 5,617 | 6,733 | 4,414 | 2,918 |
| Unliquidated Obligations | 6,119 | 7,961 | 9,844 | 9,841 | 7,057 | 6,578 |
| Supply Backorders | 2,090 | 2,611 | 2,332 | 1,806 | 1,916 | 1,916 |
| Cash Balance | 1,521 | 2,059 | 1,895 | 1,302 | 727 | 1,744 |

# Appropriations

Table 6 displays the requested AWCF Direct Appropriations broken out by type. Army estimates total cash losses associated with COVID-19 have exceeded $1.6 billion. The Army offset a portion of FY 2020 losses through the request and receipt of a $592 million cash reprogramming action in September 2020 and continues to implement internal cash mitigation actions to improve the AWCF cash posture. Army is requesting a $323 million direct appropriation to offset cash losses associated with high Supply Management inventory deliveries and low collections from reduced Supply Management sales. The $323 million direct appropriation request in FY 2022 is part of a comprehensive cash mitigation strategy to reduce risk of insolvency early in FY 2022—when the risk to cash will be at its highest—and increase cash above the lower operational requirement by the end of the fiscal year.

The Supply Management Activity (SMA) is requesting a direct appropriation for War Reserve Secondary Items to purchase secondary items for Army Prepositioned Stocks (APS). For further explanation on these requested Direct Appropriations see the Supply Management Activity section.

The Industrial Operations (IO) activity is requesting Industrial Mobilization Capacity for costs associated with maintaining facilities to meet surge capacity needed for mobilization or war. For further explanation on IO Direct Appropriations request please see the Industrial Operations section.

Table 6 – Appropriations

| ($ Millions) | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| **War Reserve Secondary Items** | **54.6** | **44.3** | **34.8** |
| *Base Funding* | *33.8* | *24.2* | *34.8* |
| *Direct War and Enduring Costs** | *20.8* | *20.1* | *0.0* |
| **Industrial Mobilization Capacity** | **57.5** | **32.6** | **26.9** |
| *Base Funding* | *57.5* | *32.6* | *26.9* |
| **Arsenal Sustainment Initiative** | **129.0** | **125.0** | **0.0** |
| *Base Funding* | *129.0* | *125.0* | *0.0* |
| **Digital Manufacturing Pilot Program** | **9.0** | **0.0** | **0.0** |
| *Base Funding* | *9.0* | *0.0* | *0.0* |
| **AWCF Cash Infusion** | **592.1** | **0.0** | **323.0** |
| *Base Funding* | *592.1* | *0.0* | *323.0* |
| **Total Appropriated Funds** | **842.2** | **201.8** | **384.7** |
| *Base Funding* | *821.4* | *181.7* | *384.7* |
| *Direct War and Enduring Costs** | *20.8* | *20.1* | *0.0* |

Note: FY 2022 Direct War and Enduring Costs Transferred to the Base Budget. Enduring costs accounted for in the base budget: $7.1 million.

# Cash Management Plan

The AWCF cash requirement is established using a process, based on four primary elements: 1) *rate* of disbursements; 2) *range* of operations; 3) *risk* mitigation; and 4) cash *reserves*. This method is known as the "Four Rs" and the elements are explained below:

1) **Rate** of Disbursements – The rate of disbursements varies within the Army's two activity groups; thus an optional calculation was used to derive the average amount disbursed between collection cycles.

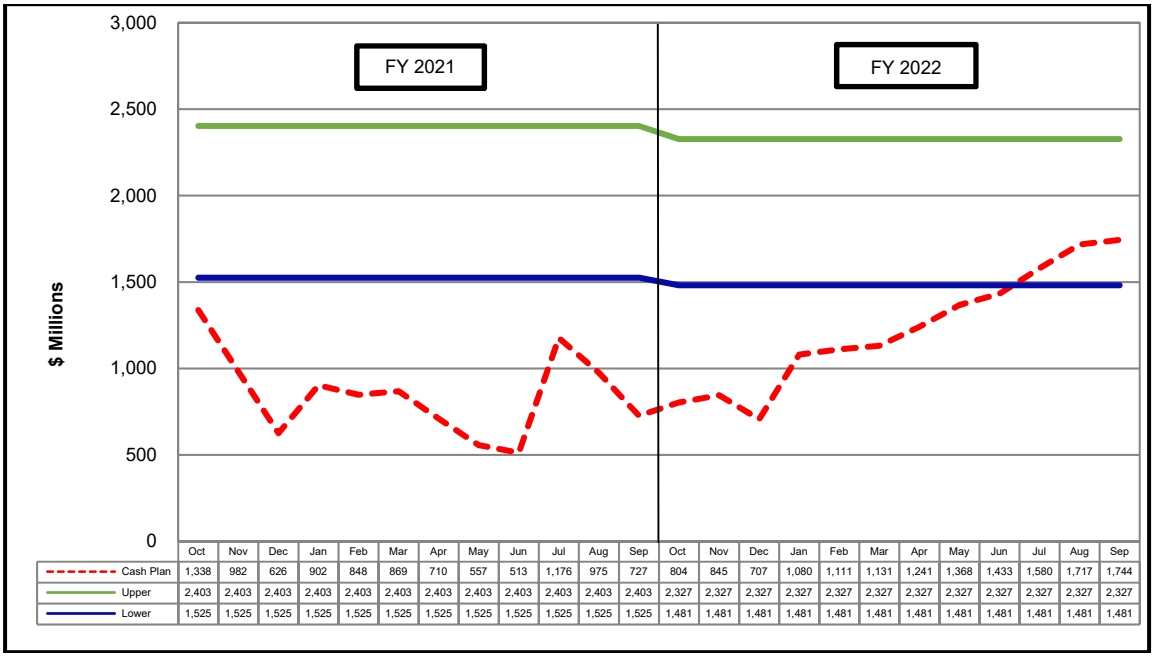
2) **Range** of Operations – The range of operations are derived using the difference between the highest and lowest expected monthly cash level in the preceding fiscal year.

3) **Risk** Mitigation – The risk mitigation element includes a factor for operational volatility and the supply management pricing/credit policy. Operational volatility is based on multiple disbursement cycles before a collection cycle. A factor is also included for risk mitigation supporting the Army's recent return to standard pricing and credit.

4) Cash **Reserves** – The cash reserves include the amount of positive accumulated operating results planned to be returned to the customers; unliquidated disbursements for capital investments; direct appropriations; a commodity/market price adjustment; and an amount to cover the minimum required capital investment.

Chart 4 shows the projected monthly cash balances for FY 2021 and FY 2022. This chart displays how the aforementioned cash from operations and appropriations affect the cash balance and where the projected ending balance falls within the upper and lower operating range.

Chart 4 - Cash Management Plan




| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cash Plan | 1,338 | 982 | 626 | 902 | 848 | 869 | 710 | 557 | 513 | 1,176 | 975 | 727 | 804 | 845 | 707 | 1,080 | 1,111 | 1,131 | 1,241 | 1,368 | 1,433 | 1,580 | 1,717 | 1,744 |
| Upper | 2,403 | 2,403 | 2,403 | 2,403 | 2,403 | 2,403 | 2,403 | 2,403 | 2,403 | 2,403 | 2,403 | 2,403 | 2,327 | 2,327 | 2,327 | 2,327 | 2,327 | 2,327 | 2,327 | 2,327 | 2,327 | 2,327 | 2,327 | 2,327 |
| Lower | 1,525 | 1,525 | 1,525 | 1,525 | 1,525 | 1,525 | 1,525 | 1,525 | 1,525 | 1,525 | 1,525 | 1,525 | 1,481 | 1,481 | 1,481 | 1,481 | 1,481 | 1,481 | 1,481 | 1,481 | 1,481 | 1,481 | 1,481 | 1,481 |

The AWCF cash plan accounts for a number of mitigation actions in FY 2021 and FY 2022, reducing the risk of insolvency and achieving a cash position above the lower operational requirement by the end of FY 2022. The primary actions include: 1) Reduced Supply Management contract authority in FY 2021 and FY 2022 which will decrease inventory purchases and reduce future disbursements; 2) Increased FY 2022 rates and prices for both business areas; 3) Credit restrictions for Supply Management customers in FY 2021 and FY 2022; and 4) Requesting a $323 million direct appropriation cash infusion in FY 2022. Army's cash mitigation strategy also assumes an $800 million

requirement for an Above Threshold Reprogramming in FY 2021 and the execution of a $200 million advance billing in FY 2021.

# End of Year Cash Balance

Table 7 shows total collections, disbursements, appropriations, transfers, and ending cash balances. The FY 2022 budget includes a cash plan based on projected operational and capital disbursements, collections, and direct appropriations. Upper and lower operational range cash requirements have been identified to measure the sufficiency of cash. AWCF remains sensitive to large swings in demand activity. While Army is projecting to end FY 2022 between the upper and lower operational requirement, cash remains a concern as projected demand activity remains uncertain due to reduced Direct War requirements, Army's revised training strategy, and the possibility of lingering COVID-19 effects.

Table 7 - Cash Balance

| ($ Millions) | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| *Disbursements* | 12,932.8 | 12,165.7 | 10,019.9 |
| *Collections* | 11,500.5 | 10,588.4 | 10,652.6 |
| *Net Outlays from Operations* | 1,432.3 | 1,577.3 | (632.7) |
| *Direct Appropriations* | 247.7 | 201.8 | 384.7 |
| *Transfers In* | 592.1 | 800.0 | 0.0 |
| *Transfers Out* | 0.0 | 0.0 | 0.0 |
| *Total Net Outlays* | 592.5 | 575.5 | (1,017.4) |
| ***Ending Cash Balance*** | **1,302.0** | **726.6** | **1,744.0** |
| *Upper Operating Range* | 2,438.7 | 2,403.5 | 2,396.7 |
| *Lower Operating Range* | 1,486.5 | 1,525.3 | 1,481.2 |

# Capital Budget

The AWCF activities develop and maintain operational capabilities by acquiring or replacing production equipment, executing minor construction projects, and developing software. New equipment is acquired to replace obsolete and unserviceable equipment, modernize production and maintenance processes, and eliminate environmental hazards. The cost of capital projects is recouped through capital investment recovery included in customer rates. Unlike the operating budget which contains the annual operating costs of each activity, the capital budget justifies the purchase of assets that equal or exceed a unit cost of $250,000 and have a useful life of two or more years.

A more in-depth discussion and detailed exhibits are provided in the Capital Budget section. Table 8 summarizes the AWCF capital investment program request.

Table 8 - Capital Budget

| ($ Millions) | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| **Supply Management** | 8.7 | 17.2 | 18.0 |
| **Industrial Operations** | 53.8 | 75.7 | 55.0 |
| *Total Capital Budget* | 62.5 | 92.9 | 73.0 |
| *Total Capital Cash Outlays* | 87.9 | 93.9 | 88.9 |

# Supply Management

# Introduction

The Supply Management activity group operates in a business-like environment by relying on sales revenue rather than appropriations to finance continuing operations. This enterprise uses contract authority to procure and repair spare parts. As suppliers deliver equipment components, the Army Working Capital Fund (AWCF) expends cash and places spare parts in inventory to await customer demands. Filled customer demands result in the collection of sales revenue, which replenishes cash. The Supply Management enterprise synchronizes rates and budget assumptions with Army appropriated funding requests in support of Soldier and weapon systems readiness. The bulk of demands originate from Operation and Maintenance, Army customers, who primarily request spare parts to maintain combat equipment readiness for the Army operating forces.

***Mission:***
***Provide the Army with inventory management of spare and repair parts supporting equipment sustainment, operational readiness, and combat capability.***

The Army prices spare parts based on the most recent acquisition cost from a commercial vendor, or the most recent repair cost from a contract or organic source of repair. The price of each item includes a surcharge known as the cost recovery rate (CRR), to recover the cost of AWCF operations. The intent of the CRR is to:

- Recover the activity's overhead costs such as payroll, supplies, contracts, storage, transportation, and depreciation
- Maintain a sufficient cash corpus to cover disbursements
- Break even over time

The core financial measures for Supply Management are the net operating result (NOR) and accumulated operating result (AOR). The NOR measures the activity's gain or loss within a single fiscal year, and is used to monitor how closely the activity performs compared to its budget. The AOR measures the activity's accumulated gains and losses since the fund's inception. Rates are set during budget development to break even by bringing the AOR to zero over a budget cycle. This method returns accumulated gains through reduced rates and recovers accumulated losses through increased rates. The cash management section describes the impact of cash balance analysis on rate setting. The unit cost is another core financial measure, and relates operating costs to each dollar

of sales. The unit cost can be set at, above, or below 1.0 depending on projected sales volume; the unit cost section discusses this metric.

# Efficiencies and Business Process Improvements

Cost efficiency is an inherent attribute of the AWCF. The revolving fund construct promotes total cost visibility, full cost recovery, and fosters a business-like, competitive atmosphere. Although commercial businesses focus on their bottom line profit, the Supply Management activity focuses on the unit cost and other indicators to gauge the efficiency of the operation. Supply Management activities continue to emphasize the control of overhead costs also known as logistics operations (LOGOPS).

Army Materiel Command (AMC) continues proactive measures of reducing inventory through the Sales and Operations Planning (S&OP) process initiated in FY 2013. The S&OP process allows management better oversight and improves the supply chain review process and financial planning. The supply chain review process has shifted from the legacy review of inventory by segmentations to total inventory holdings. The S&OP decisions and action plans align to established strategic goals and are executed through the Army's supply action module, Material Requirements Planning (MRP), in the Logistics Modernization Program (LMP). Army's current focus is on improving inventory turns, establishing new inventory reduction goals, and reducing forecast errors. AMC also facilitates quarterly reviews of unserviceable assets to better assess the need to repair rather than initiating new procurement.

# Inventory Management

In FY 2016, the Army changed the methodology used to calculate inventory requirements from a quarterly stratification of inventory report known as STRAT to a monthly Supply Chain Planning and Reporting Tool (SCPRT). The movement to SCPRT aligns reporting requirements with the Army's Enterprise Resource Planning (ERP) system, Logistics Modernization Program (LMP). This change leverages LMP's Material Requirements Planning (MRP) module using backwards planning of requirements, improves accuracy of forecasting, and better supports Warfighter requirements.

Army continuously takes proactive measures ensuring forecasted inventory meets future demands. Army reviews and validates requirement levels versus inventory levels maintaining focus on buying and repairing items needed by customers, and not retaining excess inventory.

# Functional Description

The Supply Management activity group buys and manages an operating inventory of Army-managed and non-Army managed spare and repair parts for sale to its customers, primarily Army operating units. The activity group also maintains a protected inventory of spares in Army Prepositioned Stocks (APS) released in support of deploying combat units. The AWCF operating inventory is stored and maintained primarily at more than 200 supply support activities (SSA). SSA management includes, but is not limited to, stocking the items needed for customer readiness, monitoring performance metrics, and conducting inventories. Inventory is managed at national and below national levels as described below:

- National Level - consists of life cycle management commands, depots, and arsenals. Materiel may be Army managed or non-Army managed meaning the source of supply may be Department of the Army, another Service, or another Department of Defense activity. Typically, SSAs request and receive materiel from the national level.

- Below National Level:

  - Tactical – under the control of Sustainment Brigade Commanders. These SSAs provide spares supporting the immediate needs of combat and combat support battalions and companies. The quantity of inventory items is limited to an amount capable of transport by unit organic vehicles or aircraft.

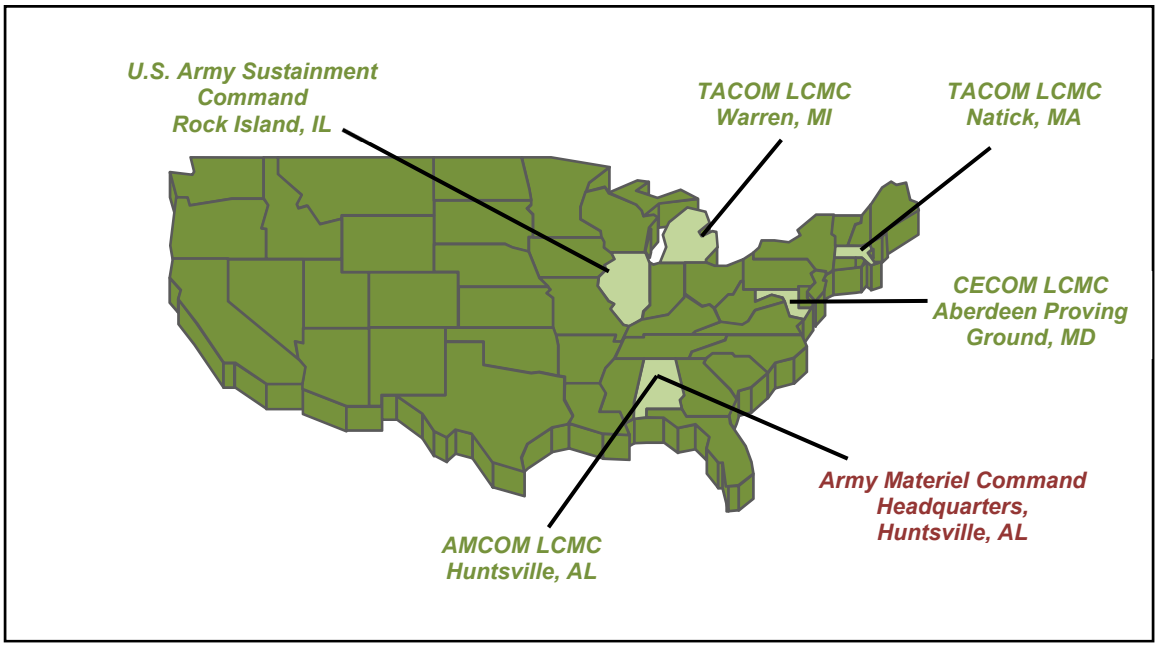
  - Installation - under the control of the Logistics Readiness Centers (LRC). These activities provide a means to retrograde unneeded materiel from tactical SSA to meet other Army requirements. They also stock back-up inventory to meet tactical units' requirements that exceed storage capacity. When deployed to a theater of operations, tactical activities receive back-up support from a theater distribution center established by the deployed force command to centrally receive, redistribute, and retrograde spares as required.

AWCF Army Prepositioned Stock (APS) is protected inventory located in the United States, Europe, South Korea, Kuwait, and aboard ships afloat off Guam and Diego Garcia. This prepositioned war reserve materiel is protected inventory and released to units performing combat, peacekeeping, or other deployment operations.

# Activity Group Composition

Figure SM 1 below displays the locations of Headquarters, Army Materiel Command (AMC), each Life Cycle Management Command (LCMC), and the Army Sustainment Command. The AMC mission is complex and ranges from developing sophisticated weapon systems, to advancing research, to maintaining, and distributing spare parts. Three core competencies encompass AMC's mission: acquisition excellence, logistics power projection, and technology generation and application. AMC works closely with industry, colleges and universities, the other Services, and other government agencies developing, buying, and maintaining state-of-the-art materiel for Army.

Figure SM 1 - Supply Management locations




The LCMCs, assigned to AMC, manage the activity group. Each LCMC acquires and manages consumable supplies and spare parts for distinct categories of weapon systems. The Army Sustainment Command acquires and maintains the Army Prepositioned Stocks, which contain materiel from each LCMC.

The mission of the Tank-automotive and Armaments Command (TACOM) LCMC includes developing, acquiring, equipping, and sustaining ground and support systems for Soldiers and other joint operations through the integration of effective and timely acquisition, logistics, and technology. The TACOM LCMC item managers support a diverse set of product lines through their life cycles, ranging from tracked combat and wheeled tactical vehicles, armaments, and watercraft, to Soldier-specific gear and biological/chemical equipment. Major weapon systems supported include the M1 Abrams Tank, M2 Bradley Fighting Vehicle, Mine Resistant Ambush Protected (MRAP) vehicle, High Mobility Multipurpose Wheeled Vehicle (HMMWV), and Stryker family of vehicles. TACOM LCMC is also responsible for providing clothing and heraldry products to Soldiers, units, and veterans. Included in TACOM LCMC is a small retail business of high demand non-Army managed items (NAMI). TACOM LCMC Headquarters activities are located at Detroit Arsenal in Warren, Michigan and U.S. Army Soldier Systems Center in Natick, Massachusetts. In FY 2022, TACOM LCMC has an authorized level of 713 civilian personnel.

A HMMWV is ejected from an aircraft over an Army airfield

The Communications-Electronics Command (CECOM) LCMC mission is to develop, provide, integrate, and sustain command, control, communications, computers, intelligence, surveillance, and reconnaissance capabilities for the Army. CECOM LCMC Headquarters activity is located at Aberdeen Proving Ground, Maryland. In FY 2022, CECOM has an authorized level of 796 civilian personnel.

Soldiers stand by for their night guard shift

The mission of the Aviation and Missile Command (AMCOM) LCMC includes developing, acquiring, fielding, and sustaining aviation, missile, and unmanned vehicle systems, ensuring readiness with seamless transition to combat operations. Major weapon systems supported include the AH-64 Apache, UH-60 Black Hawk, CH-47 Chinook, Multiple Launch Rocket System, and Patriot missile. AMCOM LCMC Headquarters activity is located at Redstone Arsenal in Huntsville, Alabama and has operational control of all aviation logistics management functions at Fort Rucker, Alabama, home of the Army Aviation Center. In FY 2022, AMCOM has an authorized level of 519 civilian personnel.

CH-47 Chinook sits atop a mountain

The mission of the Army Sustainment Command (ASC) mission includes synchronizing distribution and sustainment of materiel to and from the field. Army Prepositioned Stocks are acquired and maintained as a part of this mission. These stocks include combat equipment, supplies, and humanitarian mission stocks at worldwide land and sea-based positions. ASC is located at Rock Island Arsenal, Illinois.

# Budget Highlights

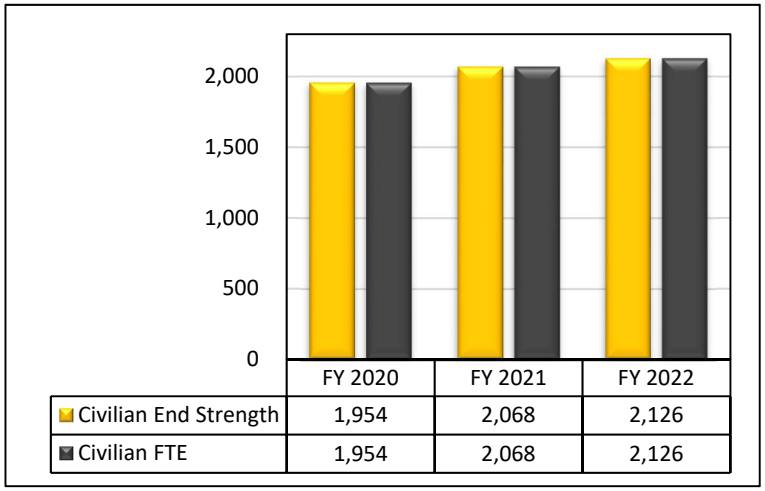
## Assumptions

The FY 2022 budget represents a business plan that supports Soldier and weapon systems readiness for both peacetime training and wartime operating requirements. The budget is aligned with the Interim National Security Strategic Guidance and supports the Army's vision to provide U.S. land forces with readiness and lethality, enabling the Army to compete, deter, and defeat any adversary. The AWCF provides materiel readiness to operating units and supports Army's revised training strategy and the Regionally Aligned Readiness and Modernization Model (ReARMM). The budget reflects this adjustment in the Army's FY 2022 training strategy as well as the reduction of Direct War and Enduring Cost requirements. If customer demand levels exceed budget estimates during the year of execution, variability target is included in the budget to ensure supply contract authority is available to remain ready and responsive to changing operational requirements. Variability target is further discussed in the Operating Contract Authority section.

## Personnel

The personnel end strength reflects actual execution in FY 2020 and authorized levels in FY 2021 and FY 2022. FY22 reflects an increase in FTEs to more accurately reflect planned execution of AWCF direct authorizations. Personnel levels include secondary item managers, logistics management specialists, and general and administrative support positions. Military end strength in FY 2022 is two.

Chart SM 1 – Civilian Personnel



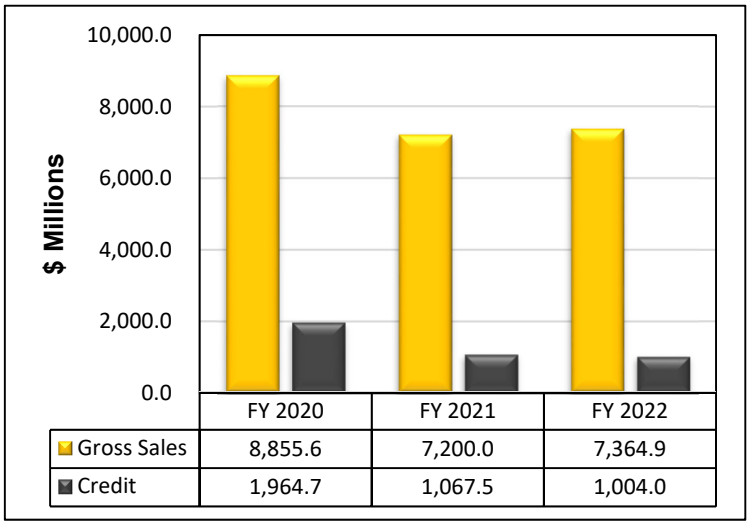

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Civilian End Strength | 1,954 | 2,068 | 2,126 |
| Civilian FTE | 1,954 | 2,068 | 2,126 |

## Sales

Sales reflect income from operations and do not include direct appropriations for war reserve materiel.

Chart SM 2 reflects actual execution in FY 2020 and projected levels in FY 2021 and FY 2022. FY 2021 shows a significant decrease in sales due to reductions to overseas operations and lingering effects of COVID-19. FY 2022 sales volume is projected to be lower than FY 2021 but the total sales value will increase due to the higher cost recovery rate. The Army is restricting credit as a cash mitigation action in FY 2021 and FY 2022. Several exhibits display Sales: Fund 14, *Revenue and Costs;* Fund 11, *Source of New Orders and Revenue;* and SM 1, *Supply Management Summary* (sales net of credit).

Chart SM 2 – Gross Sales

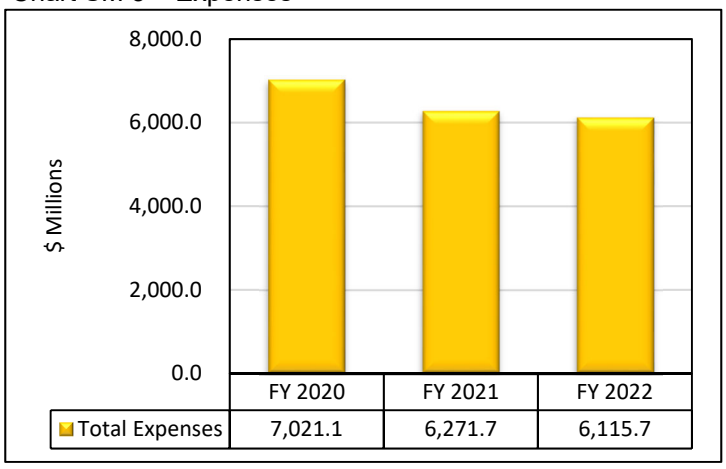



| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Gross Sales | 8,855.6 | 7,200.0 | 7,364.9 |
| Credit | 1,964.7 | 1,067.5 | 1,004.0 |

# Expenses

Expenses consist of materiel and operational costs. The decrease in projected FY 2022 expenses is attributed to lower cost of goods sold. Operational costs for salary, contracts, and materiel and supplies remain steady. Expenses are displayed on exhibit Fund 14, *Revenue and Costs*.

Chart SM 3 – Expenses

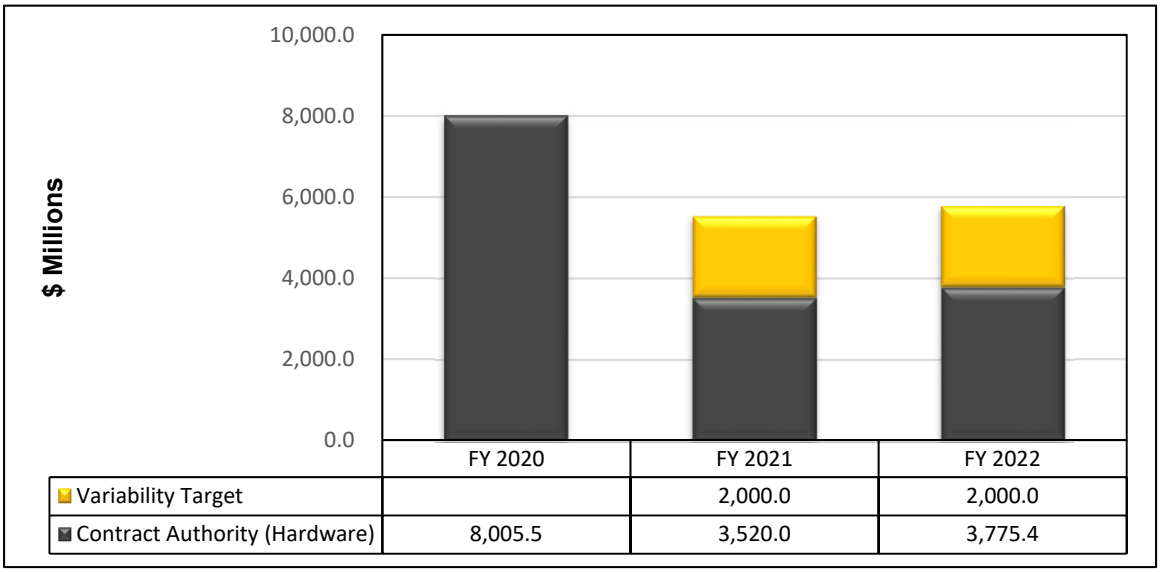



| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Total Expenses | 7,021.1 | 6,271.7 | 6,115.7 |

# Operating Contract Authority (Hardware)

The budget requests operating contract authority for the acquisition, repair, and replenishment of spare parts. In FY 2020, the AWCF cash balance was reduced due to COVID-19's impacts, reduced training, and decreased worldwide operations. The Army took calculated measures to reduce the risk of more cash losses, including decreasing the amount of contract authority available for hardware purchases in FY 2021 and FY 2022. Variability target is included in the budget to ensure contract authority is available to respond rapidly to unexpected surges in customer demands during the year of execution. Operating contract authority is displayed on exhibit SM 1, *Supply Management Summary* and SM 3b, *Operating Requirements by Weapon System*.

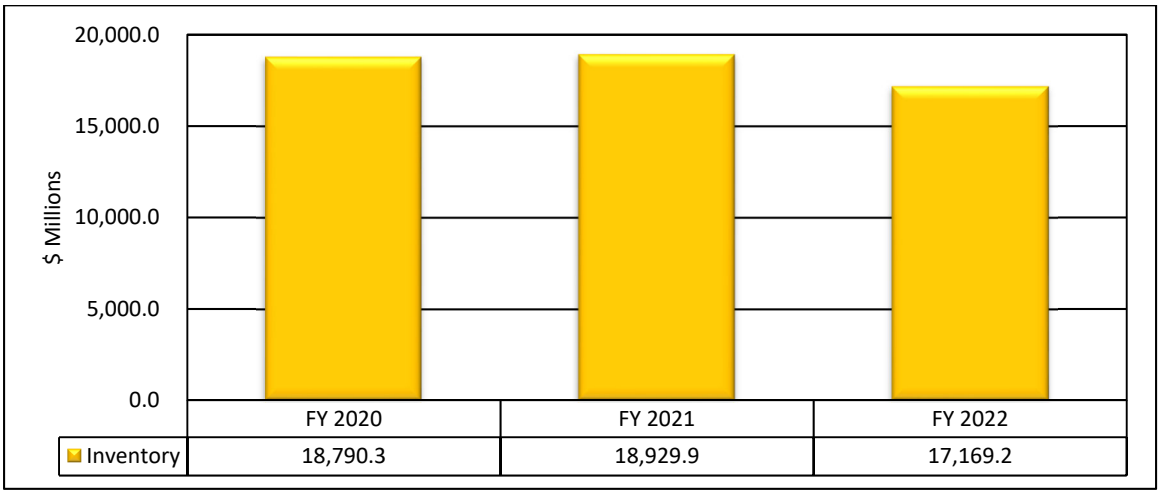
Chart SM 4 –Contract Authority (Hardware)




# Inventory

Inventory values shown in chart SM 5, include operational inventory, carcasses awaiting repair, inventory required beyond the budget year, economic and contingency retention stock, and secondary items included in war reserve. Spares inventory levels are sufficient to ensure high stock availability for war efforts. Supply Management will lower inventory levels by filling customer orders while reducing inventory orders and receipts. Inventory is displayed on exhibit SM 4, *Inventory Status*.

Chart SM 5 – Inventory



# Operating Results

The net operating result (NOR) represents the difference between revenue and expenses within a fiscal year. A Supply Management activity cost recovery rate increase will drive a positive Net Operating Result in FY 2022. The accumulated operating result (AOR) represents the summation of all operating gains and losses since activity group inception along with any prior period adjustments. AWCF operates on a break-even basis during the budget cycle. In the next budget cycle, Supply Management will evaluate its AOR projections, cash position, and impact on future rates to determine the amount of AOR to recover or return. NOR and AOR are displayed on exhibit Fund 14, *Revenue and Costs*.

Table SM 1 - Operating Results

| ($ Millions) | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Net Operating Result | (118.6) | (139.3) | 245.2 |
| Prior Year AOR | 12.6 | (106.0) | (245.2) |
| Accumulated Operating Result | (106.0) | (245.2) | 0.0 |

# Cost Recovery Rate

The Supply Management cost recovery rate (CRR) is set to recover full costs and adjust for gains and losses. Typical costs recovered include civilian pay, distribution depot costs, transportation costs, other Defense bills associated with supply operations, and costs of replacing inventory washouts. Higher overhead costs and significantly reduced customer demand have driven an increase in the FY 2022 CRR. The price change to customer is the change in overhead costs weighted by the change in sales volume.

Table SM 2 – Cost Recovery Rate and Price Change

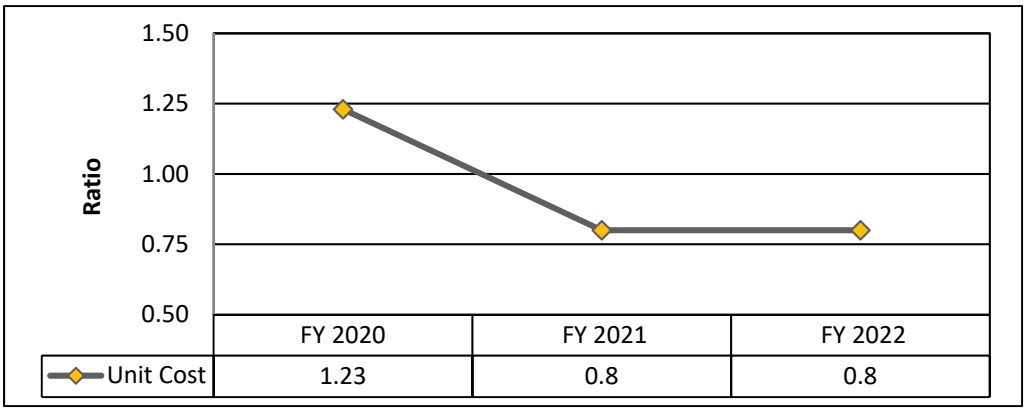
| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Cost Recovery Rate (CRR) | 11.0% | 15.6% | 23.4% |
| Price Change to Customer | (0.1%) | 4.1% | 8.1% |

# Unit Cost

The unit cost is a metric relating operating cost to each dollar of sales. Unit cost is calculated by dividing gross operating costs (the sum of total obligations and credit) plus depreciation expense (capital investment recovery) by gross sales. As recommended in Government Accountability Office (GAO) report 10-480, Army continues to evaluate and adjust the unit cost as necessary to support Direct War and Enduring Requirements. A unit cost below 1.0 indicates that the enterprise is

reducing inventory by selling and not replenishing thus reducing the contract authority requirement. A unit cost above 1.0 indicates the Army is purchasing inventory in anticipation of future need based upon inventory management forecasts. The Army's cash balance was significantly diminished in FY 2020 due to COVID-19's impacts, reduced training, and decreased worldwide operations. After operating at a unit cost above 1.0 for multiple years, the Army will execute to a unit cost below 1.0 as it works to rebuild its cash balance and mitigate future risk to cash. Potential readiness impacts will be monitored and can be addressed through use of variability target to respond rapidly to unexpected variances in costs or customer demands during the year of execution. Chart SM 6 shows unit cost for FY 2020 through FY 2022.

Chart SM 6 - Unit Cost

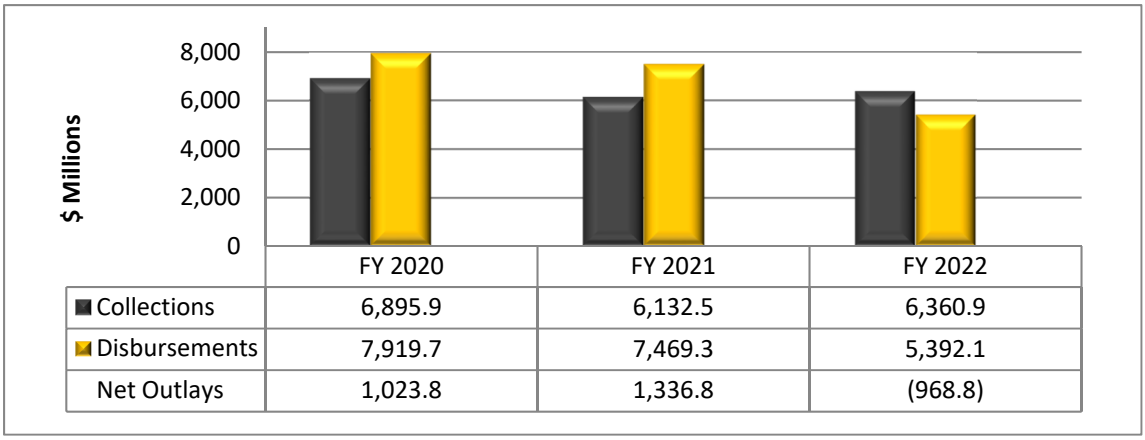



***Unit cost = Obligations + Credit + Depreciation expense / Gross sales***

# Collections, Disbursements, and Outlays

Collections are projected based on sales and changes in accounts receivable. Disbursements are projected based on monthly operating expenses, changes in accounts payable, and Capital Investment Program obligations. Army has increased rates and prices for FY 2022 to increase collections and has reduced contract authority in FY 2021 and FY 2022 to lower current and future disbursements. Supply Management is projected to start contributing to the restoration of the cash balance in FY 2022.

Chart SM 7 – Cash Management



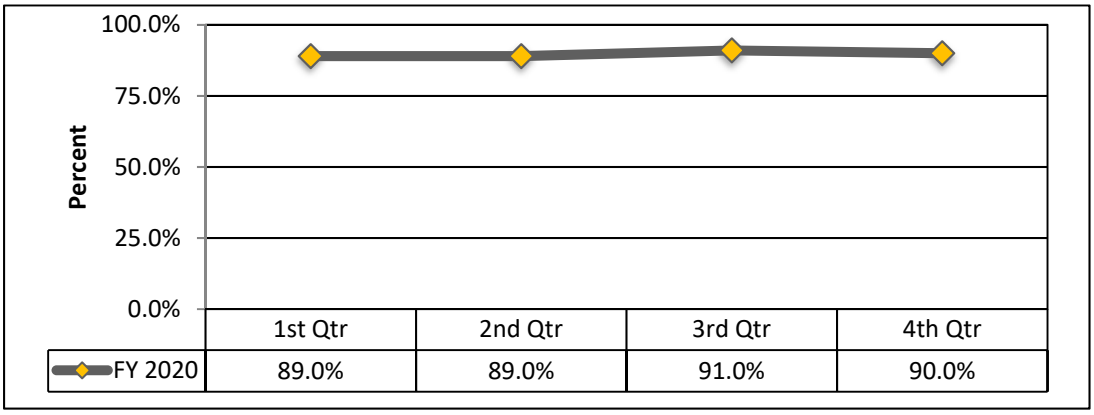

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Collections | 6,895.9 | 6,132.5 | 6,360.9 |
| Disbursements | 7,919.7 | 7,469.3 | 5,392.1 |
| Net Outlays | 1,023.8 | 1,336.8 | (968.8) |

# Performance Measurement

## Stock Availability

Supplying and maintaining Army's equipment remain key components of readiness. The stock availability (SA) goal is a primary performance measure indicating the ability of the supply system to fill requisitions. The Army's goal is 85 percent of customer demands fulfilled immediately. SA is administered through adequate funding of hardware, proper management of the supply chain, and reliable oversight of materiel stockage requirements. Chart SM 8 displays SA at the end of each quarter above the 85 percent goal in FY 2020. Army's shift in training strategy has required a shift in supply planning and prioritization. Despite reductions to contract authority, the Army does not project stock availability issues through FY 2022.

Chart SM 8 – Stock Availability (SA)

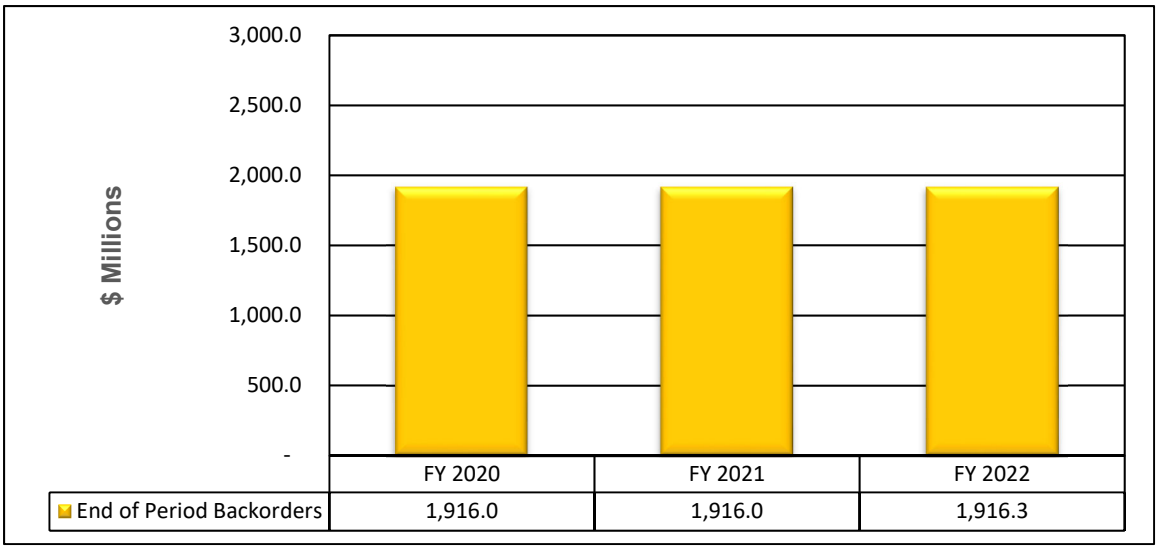



| | 1st Qtr | 2nd Qtr | 3rd Qtr | 4th Qtr |
|---|---|---|---|---|
| FY 2020 | 89.0% | 89.0% | 91.0% | 90.0% |

# Customer Backorders

Backorders are expected to remain constant through FY 2022 as sales are projected to keep pace with orders. Customer backorders for the end of each fiscal year are displayed on exhibit Fund 11, *Source of New Orders and Revenue*.

Chart SM 9 – Customer Backorders




# Supply Management Workload

Table SM 3 below displays Supply Management workload drivers. The decreases in requisitions received and issues completed are based on deployed force activity assumptions.

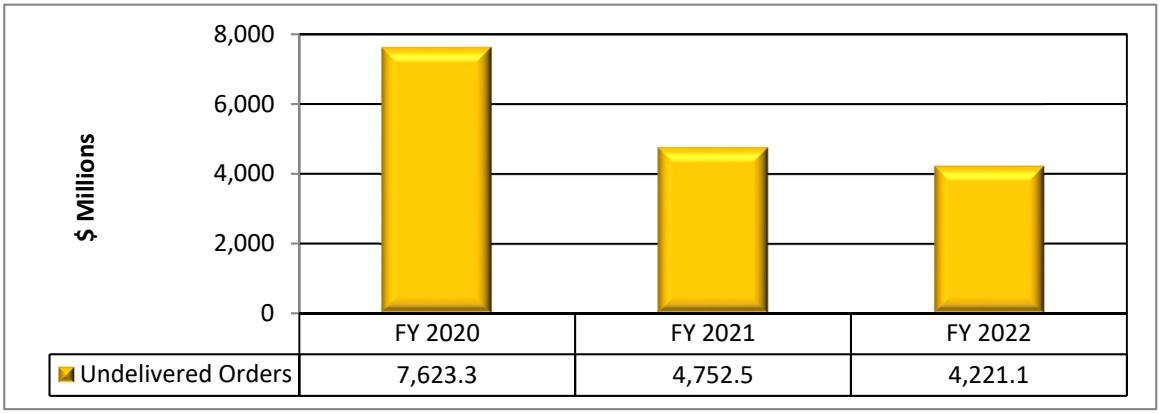
Table SM 3 - Supply Management Workload

| Supply Management Workload | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Items Managed | 118,901 | 116,895 | 117,283 |
| Requisitions Received | 688,932 | 511,527 | 572,936 |
| Issues Completed | 463,484 | 352,866 | 388,344 |
| Procurement Receipts | 92,689 | 102,626 | 107,462 |
| Contracts Awarded | 14,253 | 5,028 | 5,823 |

# Undelivered Orders

Undelivered orders represent goods and services ordered, but not yet received by AWCF. A sufficient cash balance is required to pay suppliers upon receipt of these orders. As shown in the chart below, undelivered orders are projected to continue decreasing in FY 2022 after two years of reduced materiel orders.

Chart SM 10 - Undelivered Orders




# Appropriations

Army requests a $323 million direct appropriation to offset cash losses associated with high Supply Management inventory deliveries and low collections from reduced Supply Management demand. The $323 million direct appropriation request in FY 2022 is part of a multifaceted cash mitigation strategy to reduce risk of insolvency early in FY 2022 and increase cash above the lower operational requirement by the end of the fiscal year.

Army requests $34.8 million for secondary items to support War Reserve equipment. War reserve equipment positioned without secondary items would significantly jeopardize Army's ability to complete its combat missions successfully. The secondary items purchased for war reserves support important combat weapon systems such as M2 Bradley Fighting Vehicle, artillery howitzers, rocket launchers, High Mobility Multipurpose Wheeled Vehicles (HMMWV), and Mine Resistant Ambush Protected (MRAP) Vehicles. The $7.1 million Enduring Costs in the FY 2022 War Reserve request supports European Deterrence Initiative efforts. SM 4, *Inventory Status* and SM 6, *War Reserve Materiel* exhibits displays War Reserve inventory. Exhibit Fund 14, *Revenue and Costs* displays requested Appropriations.

Table SM 4 - Appropriations

| ($ Millions) | FY 2020 Actuals | FY 2021 Enacted | FY 2022 Request |
|---|---|---|---|
| **War Reserve Secondary Items** | **54.6** | **44.3** | **34.8** |
| *Base Funding* | *33.8* | *24.2* | *34.8* |
| *Direct War and Enduring Costs[1]* | *20.8* | *20.1* | *0.0* |
| **AWCF Cash Infusion** | **492.1** | **0.0** | **323.0** |
| **Total Appropriated Funds** | **546.7** | **44.3** | **357.8** |

Note 1: *FY 2022 Direct War and Enduring Costs Transferred to the Base Budget. Enduring costs accounted for in the base budget: $7.1 million.

***War reserve secondary items improve Army's ability to meet global missions by sustaining the deployed combat force until CONUS-based re-supply commences.***

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Supply Management**

**Revenue and Costs**
**($ in Millions)**

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| **Revenue** | | | |
| AMI Sales | 7,224.7 | 5,700.0 | 5,874.9 |
| NAMM Sales | 1,630.8 | 1,498.0 | 1,488.0 |
| AMC MOB Sales | 0.1 | 2.0 | 2.0 |
| **Total Gross Sales** | **8,855.6** | **7,200.0** | **7,364.9** |
| **Credit and Allowances** | 1,964.7 | 1,067.5 | 1,004.0 |
| **Net Sales** | **6,891.0** | **6,132.5** | **6,360.9** |
| **Other Income** | **546.7** | **44.3** | **357.8** |
| War Reserve-Secondary Items | 54.6 | 44.3 | 34.8 |
| AWCF Cash Infusion Appropriation | 0.0 | 0.0 | 323.0 |
| Cash Transfer-In | 492.1 | 0.0 | 0.0 |
| **Other Revenue and Financing** | **11.5** | **0.0** | **0.0** |
| **Total Income:** | **7,449.2** | **6,176.7** | **6,718.7** |
| | | | |
| **Costs** | | | |
| **Cost of Materiel Sold from Inventory** | | | |
| AMI | 4,264.8 | 3,655.0 | 3,498.1 |
| NAMM | 1,630.8 | 1,432.0 | 1,393.2 |
| AMC MOB | 0.1 | 2.0 | 2.0 |
| **Total Cost of Materiel Sold from Inventory** | **5,895.7** | **5,089.0** | **4,893.3** |
| Inventory Losses/Obsolescence | 70.6 | 72.0 | 107.0 |
| | | | |
| **Salaries and Wages Total** | 264.4 | 308.5 | 318.5 |
| Military Personnel Compensation & Benefits | 0.2 | 0.1 | 0.1 |
| Civilian Personnel Compensation & Benefits | 264.2 | 308.3 | 318.3 |
| Travel & Transportation of Personnel | 1.1 | 3.5 | 3.6 |
| Materiel & Supplies (For Internal Operations) | 0.7 | 0.6 | 0.6 |
| Equipment | 13.5 | 4.1 | 4.2 |
| Other Purchases from Revolving Funds | 308.2 | 294.7 | 302.0 |
| Transportation of Things | 69.9 | 107.0 | 109.2 |
| Capital Investment Recovery (CIR) - Capital | 40.5 | 32.3 | 30.1 |
| Printing and Reproduction | 0.0 | 4.0 | 4.0 |
| Advisory and Assistance Services | 55.2 | 61.1 | 58.9 |
| Audit Readiness (memo entry) | 10.0 | 16.3 | 16.7 |
| Financial Statement Audit (memo entry) | 6.3 | 10.4 | 7.4 |
| Rent, Communication, Utilities & Misc. Charges | 0.3 | 0.5 | 0.5 |
| Other Purchased Services | 300.8 | 294.4 | 283.8 |
| **Total Expenses** | **7,021.1** | **6,271.7** | **6,115.7** |
| | | | |
| **Operating Result** | **428.1** | **(95.0)** | **603.0** |
| | | | |
| Less Recovery of Prior Year Pricing Discrepancies | 0.0 | 0.0 | 0.0 |
| | | | |
| Other Changes Affecting NOR: | | | |
| Less Direct Funding | (546.7) | (44.3) | (357.8) |
| Adjustment for Non-Recoverable Expense | 0.0 | 0.0 | 0.0 |
| | | | |
| **Net Operating Result** | **(118.6)** | **(139.3)** | **245.2** |
| Prior Year AOR | 12.6 | (106.0) | (245.2) |
| | | | |
| Non-Recoverable AOR for Budget Purposes | 0.0 | 0.0 | 0.0 |
| | | | |
| **Accumulated Operating Result** | **(106.0)** | **(245.2)** | **0.0** |

**EXHIBIT FUND-14**
**REVENUE AND COSTS**

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Supply Management**

**Supply Managment Summary**
**($ in Millions)**

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| **1. New Orders** | | | |
| **a. Orders from DOD Components:** | | | |
| Department of Army | | | |
| Operation & Maintenance, Army | 5,677.4 | 4,216.7 | 4,286.0 |
| Operation & Maintenance, ARNG | 725.7 | 877.9 | 908.0 |
| Operation & Maintenance, AR | 170.5 | 173.7 | 179.2 |
| **Subtotal, O&M Army:** | **6,573.7** | **5,268.3** | **5,373.2** |
| Industrial Operations Business | 799.5 | 635.6 | 641.9 |
| Procurement Appropriations | 255.7 | 292.2 | 311.2 |
| RDT&E | 13.0 | 13.7 | 14.4 |
| All Other Army | 11.3 | 5.9 | 6.3 |
| **Subtotal, Department of the Army:** | **1,079.6** | **947.3** | **973.9** |
| Other Services (List by Appropriation) | | | |
| Department of Navy | 83.7 | 98.0 | 102.4 |
| Department of Air Force | 120.3 | 163.0 | 169.1 |
| US Marine Corps | 74.7 | 83.7 | 87.4 |
| Other Department of Defense | 84.1 | 86.8 | 89.1 |
| **Subtotal, Other Services:** | **362.9** | **431.4** | **448.0** |
| **c. Total DOD** | **8,016.1** | **6,647.0** | **6,795.1** |
| **d. Other Orders:** | | | |
| Other Federal Agencies | 20.7 | 15.8 | 16.2 |
| Trust Fund | 0.0 | 0.0 | 0.0 |
| Non Federal Agencies | 0.6 | 0.9 | 0.9 |
| Foreign Military Sales | 402.0 | 536.3 | 553.1 |
| **Subtotal, Other Orders:** | **423.3** | **553.0** | **570.1** |
| **1. Total New Orders** | **8,439.4** | **7,200.0** | **7,365.2** |
| **2. Carry-In Orders (Back Orders From Prior Years)** | **2,332.2** | **1,916.0** | **1,916.0** |
| **3. Total Gross Orders** | **10,771.7** | **9,116.0** | **9,281.2** |
| **4. Carry-Out Orders (-)** | **1,916.0** | **1,916.0** | **1,916.3** |
| **5. Gross Sales** | **8,855.6** | **7,200.0** | **7,364.9** |
| **6. Credit and Allowances (-)** | **1,964.7** | **1,067.5** | **1,004.0** |
| **7. Net Sales** | **6,891.0** | **6,132.5** | **6,360.9** |

**EXHIBIT FUND-11**
**SUPPLY MANAGEMENT SUMMARY**

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Supply Management**

## Supply Management Summary
## ($ in Millions)

| | Net Customer Orders | Net Sales | Operating (Contract Authority) | Obligation Targets: Direct Appropriation - Mobilization | Obligation Targets: Direct Appropriation - Other | Total |
|---|---|---|---|---|---|---|
| **Non-Army Managed Items (NAMI)** | | | | | | |
| *FY 2020* | 1,600.8 | 1,629.6 | 1,641.9 | 0.0 | 0.0 | 1,641.9 |
| *FY 2021* | 1,496.0 | 1,496.0 | 1,320.0 | 0.0 | 0.0 | 1,320.0 |
| *FY 2022* | 1,491.0 | 1,486.0 | 1,486.0 | 0.0 | 0.0 | 1,486.0 |
| **Army Managed Items (AMI)** | | | | | | |
| ***FY 2020*** | **4,873.9** | **5,261.3** | **6,363.6** | **16.4** | **0.0** | **6,380.0** |
| ***FY 2021*** | **4,634.5** | **4,634.5** | **2,198.0** | **24.3** | **0.0** | **2,222.3** |
| ***FY 2022*** | **4,868.3** | **4,872.9** | **2,287.4** | **17.1** | **0.0** | **2,304.5** |
| **AMC Mobilization** | | | | | | |
| *FY 2020* | 0.0 | 0.1 | 0.0 | 38.1 | 0.0 | 38.2 |
| *FY 2021* | 2.0 | 2.0 | 2.0 | 20.0 | 0.0 | 22.0 |
| *FY 2022* | 2.0 | 2.0 | 2.0 | 17.7 | 0.0 | 19.7 |
| **Total Hardware** | | | | | | |
| ***FY 2020*** | **6,474.8** | **6,891.0** | **8,005.5** | **54.6** | **0.0** | **8,060.1** |
| ***FY 2021*** | **6,132.5** | **6,132.5** | **3,520.0** | **44.3** | **0.0** | **3,564.3** |
| ***FY 2022*** | **6,361.3** | **6,360.9** | **3,775.4** | **34.8** | **0.0** | **3,810.2** |
| *Cost of Operations (LOGOPS)* | | | | | | |
| *FY 2020* | | | 1,014.3 | | | 1,014.3 |
| *FY 2021* | | | 1,078.5 | | | 1,078.5 |
| *FY 2022* | | | 1,085.3 | | | 1,085.3 |
| *Enterprise Software Initiative* | | | | | | |
| *FY 2020* | | | 0.0 | | | 0.0 |
| *FY 2021* | | | 25.0 | | | 25.0 |
| *FY 2022* | | | 0.0 | | | 0.0 |
| **Total Operating Authority** | | | | | | |
| **FY 2020** | **6,474.8** | **6,891.0** | **9,019.8** | **54.6** | **0.0** | **9,074.3** |
| **FY 2021** | **6,132.5** | **6,132.5** | **4,623.5** | **44.3** | **0.0** | **4,667.7** |
| **FY 2022** | **6,361.3** | **6,360.9** | **4,860.7** | **34.8** | **0.0** | **4,895.5** |

**EXHIBIT SM-1**
**SUPPLY MANAGEMENT SUMMARY**

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Supply Management**

## Supply Management Summary
## ($ in Millions)

| | Net Customer Orders | Net Sales | Operating (Contract Authority) | Obligation Targets: Direct Appropriation - Mobilization | Obligation Targets: Direct Appropriation - Other | Total |
|---|---|---|---|---|---|---|
| *Total Capital Obligations (CIP)* | | | | | | |
| *FY 2020* | | | 19.7 | | | 19.7 |
| *FY 2021* | | | 17.2 | | | 17.2 |
| *FY 2022* | | | 18.0 | | | 18.0 |
| *Variability Target* | | | | | | |
| *FY 2020* | | | 0.0 | | | 0.0 |
| *FY 2021* | | | 2,000.0 | | | 2,000.0 |
| *FY 2022* | | | 2,000.0 | | | 2,000.0 |
| **Target Total** | | | | | | |
| **FY 2020** | **6,474.8** | **6,891.0** | **9,039.5** | **54.6** | **0.0** | **9,094.1** |
| **FY 2021** | **6,132.5** | **6,132.5** | **6,640.7** | **44.3** | **0.0** | **6,684.9** |
| **FY 2022** | **6,361.3** | **6,360.9** | **6,878.7** | **34.8** | **0.0** | **6,913.5** |
| **Direct Appropriations** | | | | | | |
| *Mobilization - War Reserve Materiel (Base)* | | | | | | |
| *FY 2020* | | | | 33.8 | | **33.8** |
| *FY 2021* | | | | 24.2 | | **24.2** |
| *FY 2022* | | | | 34.8 | | **34.8** |
| *Mobilization - Army Prepositioned Stock (Direct War and Enduring Costs)* | | | | | | |
| *FY 2020* | | | | 20.8 | | **20.8** |
| *FY 2021* | | | | 20.1 | | **20.1** |
| *FY 2022* | | | | 0.0 | | **0.0** |
| *Other - AWCF Cash Infusion (Base)* | | | | | | |
| *FY 2020* | | | | | 492.1 | **492.1** |
| *FY 2021* | | | | | 0.0 | **0.0** |
| *FY 2022* | | | | | 323.0 | **323.0** |
| **TOTAL DIRECT APPROPRIATIONS** | | | | | | |
| **FY 2020** | | | | **54.6** | **492.1** | **546.7** |
| **FY 2021** | | | | **44.3** | **0.0** | **44.3** |
| **FY 2022** | | | | **34.8** | **323.0** | **357.8** |

**EXHIBIT SM-1**
**SUPPLY MANAGEMENT SUMMARY**

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Supply Management**

**Operating Requirements by Weapon System**
**($ in Millions)**

| | FY 2020 | | FY 2021 | | FY 2022 | |
|---|---|---|---|---|---|---|
| **Weapon System** | **Obligations** | **NMCRS[1]** | **Obligations** | **NMCRS[1]** | **Obligations** | **NMCRS[1]** |
| AH-64, Apache | 265.0 | 3.0% | 313.1 | 10.0% | 329.9 | 10.0% |
| CH-47D, Chinook | 333.1 | 3.0% | 308.3 | 10.0% | 267.6 | 10.0% |
| UH-60, Black Hawk | 1,295.5 | 3.0% | 234.3 | 10.0% | 221.3 | 10.0% |
| OH-58D, Kiowa Warrior | 8.2 | 0.0% | 3.3 | 10.0% | 4.5 | 10.0% |
| Other Aviation | 362.6 | N/A | 1.2 | N/A | 0.2 | N/A |
| MLRS | 12.2 | 4.0% | 4.0 | <10.0% | 16.5 | <10.0% |
| Patriot | 168.4 | 6.0% | 71.6 | <10.0% | 74.5 | <10.0% |
| Other Missile | 108.8 | N/A | 5.6 | N/A | 8.6 | N/A |
| Firefinder | 2.5 | 0.0% | 0.7 | <10.0% | 0.0 | <10.0% |
| Night Vision Goggles | 49.9 | 0.0% | 20.5 | <10.0% | 13.4 | <10.0% |
| SINCGARS | 31.3 | 0.0% | 4.5 | <10.0% | 28.0 | <10.0% |
| Other Communications Electronics | 642.0 | N/A | 201.8 | N/A | 370.4 | N/A |
| FMTV | 36.4 | 6.0% | 21.9 | <10.0% | 13.6 | <10.0% |
| HEMTT | 89.7 | 6.0% | 5.7 | <10.0% | 3.2 | <10.0% |
| HMMWV | 103.9 | 5.0% | 39.0 | <10.0% | 17.6 | <10.0% |
| M109, Palidin | 81.3 | 8.0% | 10.3 | <10.0% | 9.0 | <10.0% |
| M198, Towed Howitzer | 31.2 | 9.0% | 18.0 | <10.0% | 18.0 | <10.0% |
| M1A1, Abrams Tank | 511.7 | 15.0% | 272.3 | <10.0% | 449.5 | <10.0% |
| M1A2, Abrams Tank (SEP) | 137.9 | 10.0% | 20.1 | <10.0% | 6.0 | <10.0% |
| M2/M3, Bradley Fighting Vehicle | 392.1 | 10.0% | 83.3 | <10.0% | 89.7 | <10.0% |
| Stryker | 248.2 | 14.0% | 220.7 | <10.0% | 221.2 | <10.0% |
| Other Tank - Automotive & Armament | 1,451.5 | N/A | 337.9 | N/A | 124.7 | N/A |
| **Subtotal:** | **6,363.6** | | **2,198.0** | | **2,287.4** | |
| NAMM Hardware Contract Authority | 1,641.9 | | 1,320.0 | | 1,486.0 | |
| AMC-MOB Hardware Contract Authority | 0.0 | | 2.0 | | 2.0 | |
| **Total:** | **8,005.5** | | **3,520.0** | | **3,775.4** | |

1: Non Mission Capable Rate Supply (NMCRS) represents the percent of time a weapon system is not mission capable due to lack of critical spare parts. The AWCF goals for NMCRS are: at or below 10% for ground and at or below 25% for aircraft. FY 2020 is actual data. FY 2021 and FY 2022 are the Army's goal for total weapon system readiness.

# Army Working Capital Fund
# Fiscal Year (FY) 2022 Budget Estimates
# Supply Management

## Inventory Status
## ($ in Millions)

| FY 2020 | TOTAL | Demand Based | Mobilization | Non-Demand Based |
|---|---|---|---|---|
| 1. Inventory BOP | 16,889.6 | 12,506.2 | 1,694.2 | 2,689.2 |
| 2. BOP Inventory Adjustments | | | | |
| A. Reclassification (Memo) | 0.0 | 69.8 | (69.8) | 0.0 |
| B. Price Change Amount (Memo) | 0.0 | 0.0 | 0.0 | 0.0 |
| C. Adj. Inventory BOP | 16,889.6 | 12,575.9 | 1,624.4 | 2,689.2 |
| 3. Receipts at LAC | 6,964.0 | 6,905.4 | 58.6 | 0.0 |
| 4. Sales (Total from Schedule 6) | 7,847.0 | 7,846.9 | 0.1 | 0.0 |
| 5. Inventory Adjustments | | | | |
| A. Capitalization (+ or -) | (70.2) | 29.9 | 0.0 | (100.1) |
| B. Returns from Customers for Credit | 2,070.5 | 2,070.5 | 0.0 | 0.0 |
| C. Returns from Customers Without Credit | 1,636.8 | 234.3 | 0.0 | 1,402.5 |
| D. Returns to Suppliers (-) | (40.1) | (40.1) | 0.0 | 0.0 |
| E. Transfers to Property Disposal (-) | (535.6) | (26.6) | 0.0 | (509.0) |
| F. Issues/Receipts wo Reimbursements (+ or -) | (187.2) | (0.4) | (0.3) | (186.4) |
| G. Other | (90.5) | (142.2) | 67.0 | (15.4) |
| H. Total Adjustments | 2,783.7 | 2,125.5 | 66.7 | 591.6 |
| 6. Inventory EOP | 18,790.3 | 13,759.9 | 1,749.6 | 3,280.8 |
| 7. Inventory EOP (MAC) | 18,790.3 | 13,759.9 | 1,749.6 | 3,280.8 |
| A. Economic Retention (Memo) | | | | 507.9 |
| B. Contingency Retention (Memo) | | | | 1,360.0 |
| C. Potential DoD Reutilization (Memo) | | | | 1,412.9 |
| 8. Inventory on Order EOP (Memo) | 7,623.3 | 7,555.0 | 68.3 | 0.0 |

**Narrative:** Column "Non-Demand Based" includes inventory that stratifies beyond the budget year, economic and contingency retention stock, and inventory excess to the approved acquistion objective.

# Army Working Capital Fund
# Fiscal Year (FY) 2022 Budget Estimates
# Supply Management

## Inventory Status
## ($ in Millions)

| FY 2021 | TOTAL | Demand Based | Mobilization | Non-Demand Based |
|---|---|---|---|---|
| 1. Inventory BOP | 18,790.3 | 13,759.9 | 1,749.6 | 3,280.8 |
| 2. BOP Inventory Adjustments | | | | |
| A. Reclassification (Memo) | 0.0 | 46.1 | (46.1) | 0.0 |
| B. Price Change Amount (Memo) | 0.0 | 0.0 | 0.0 | 0.0 |
| C. Adj. Inventory BOP | 18,790.3 | 13,806.0 | 1,703.5 | 3,280.8 |
| 3. Receipts at LAC | 6,390.8 | 6,296.2 | 94.7 | 0.0 |
| 4. Sales (Total from Schedule 6) | 6,158.5 | 6,156.5 | 2.0 | 0.0 |
| 5. Inventory Adjustments | | | | |
| A. Capitalization (+ or -) | (407.3) | 75.8 | (236.5) | (246.5) |
| B. Returns from Customers for Credit | 2,230.2 | 2,230.2 | 0.0 | 0.0 |
| C. Returns from Customers Without Credit | 1,578.5 | 0.0 | 0.0 | 1,578.5 |
| D. Returns to Suppliers (-) | (46.1) | (46.1) | 0.0 | 0.0 |
| E. Transfers to Property Disposal (-) | (789.3) | (150.0) | (32.9) | (606.4) |
| F. Issues/Receipts wo Reimbursements (+ or -) | (207.6) | 2.0 | (71.8) | (137.8) |
| G. Other | (2,451.1) | (2,367.2) | (50.4) | (33.5) |
| H. Total Adjustments | (92.7) | (255.2) | (391.6) | 554.2 |
| 6. Inventory EOP | 18,929.9 | 13,690.4 | 1,404.6 | 3,835.0 |
| 7. Inventory EOP (MAC) | 18,929.9 | 13,690.4 | 1,404.6 | 3,835.0 |
| A. Economic Retention (Memo) | | | | 593.7 |
| B. Contingency Retention (Memo) | | | | 1,589.7 |
| C. Potential DoD Reutilization (Memo) | | | | 1,651.5 |
| 8. Inventory on Order EOP (Memo) | 4,752.5 | 4,683.0 | 69.5 | 0.0 |

**Narrative:** Column "Non-Demand Based" includes inventory that stratifies beyond the budget year, economic and contingency retention stock, and inventory excess to the approved acquistion objective.

## Army Working Capital Fund
## Fiscal Year (FY) 2022 Budget Estimates
## Supply Management

### Inventory Status
### ($ in Millions)

| FY 2022 | TOTAL | Demand Based | Mobilization | Non-Demand Based |
|---|---|---|---|---|
| 1. Inventory BOP | 18,929.9 | 13,690.4 | 1,404.6 | 3,835.0 |
| 2. BOP Inventory Adjustments | | | | |
| A. Reclassification (Memo) | 0.0 | 10.0 | (10.0) | 0.0 |
| B. Price Change Amount (Memo) | 0.0 | 0.0 | 0.0 | 0.0 |
| C. Adj. Inventory BOP | 18,929.9 | 13,700.4 | 1,394.6 | 3,835.0 |
| 3. Receipts at LAC | 4,306.8 | 4,136.5 | 170.3 | 0.0 |
| 4. Sales (Total from Schedule 6) | 5,899.3 | 5,897.3 | 2.0 | 0.0 |
| 5. Inventory Adjustments | | | | |
| A. Capitalization (+ or -) | (201.0) | 22.7 | (40.0) | (183.7) |
| B. Returns from Customers for Credit | 2,264.9 | 2,264.9 | 0.0 | 0.0 |
| C. Returns from Customers Without Credit | 1,586.7 | 0.0 | 0.0 | 1,586.7 |
| D. Returns to Suppliers (-) | (42.5) | (42.5) | 0.0 | 0.0 |
| E. Transfers to Property Disposal (-) | (783.8) | (150.0) | (50.0) | (583.8) |
| F. Issues/Receipts wo Reimbursements (+ or -) | (144.7) | 4.5 | (14.0) | (135.2) |
| G. Other | (2,847.8) | (2,686.6) | (129.5) | (31.8) |
| H. Total Adjustments | (168.3) | (587.0) | (233.5) | 652.2 |
| 6. Inventory EOP | 17,169.2 | 11,352.6 | 1,329.4 | 4,487.2 |
| 7. Inventory EOP (MAC) | 17,169.2 | 11,352.6 | 1,329.4 | 4,487.2 |
| A. Economic Retention (Memo) | | | | 694.7 |
| B. Contingency Retention (Memo) | | | | 1,860.1 |
| C. Potential DoD Reutilization (Memo) | | | | 1,932.4 |
| 8. Inventory on Order EOP (Memo) | 4,221.1 | 4,145.4 | 75.7 | 0.0 |

**Narrative:** Column "Non-Demand Based" includes inventory that stratifies beyond the budget year, economic and contingency retention stock, and inventory excess to the approved acquistion objective.

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Supply Management**

**WAR RESERVE MATERIAL (WRM)**
**STOCKPILE ($ in Millions)**

| FY 2020 | Total | WRM Protected | WRM Other |
|---|---|---|---|
| 1. Inventory BOP | 1,694.2 | 1,694.2 | 0.0 |
| 2. Price Change | 0.0 | 0.0 | 0.0 |
| 3. Reclassification | (69.8) | (69.8) | 0.0 |
| 4. Inventory Changes | | | |
| a. Receipts @ standard | 58.6 | 58.6 | 0.0 |
| (1) Purchases | 58.6 | 58.6 | 0.0 |
| (2) Returns from Customer | 0.0 | 0.0 | 0.0 |
| b. Issues @ standard | 0.1 | 0.1 | 0.0 |
| (1) Sales | 0.1 | 0.1 | 0.0 |
| (2) Returns to Suppliers | 0.0 | 0.0 | 0.0 |
| (3) Disposals | 0.0 | 0.0 | 0.0 |
| c. Adjustments @ standard | 66.7 | 66.7 | 0.0 |
| (1) Capitalizations | 0.0 | 0.0 | 0.0 |
| (2) Gains and losses | 0.0 | 0.0 | 0.0 |
| (3) Other Adjustments | 66.7 | 66.7 | 0.0 |
| 5. Inventory EOP | 1,749.6 | 1,749.6 | 0.0 |
| STOCKPILE COSTS | | | |
| 1. Storage | 0.0 | | |
| 2. Management | 0.0 | | |
| 3. Maintenance/Other | 0.0 | | |
| Total Costs | 0.0 | | |
| WRM BUDGET REQUEST (OBLIGATIONS AT COST) | | | |
| 1. Additional WRM | 54.6 | | |
| 2. Replenishment WRM | 0.0 | | |
| 3. Repair WRM | 0.0 | | |
| 4. Assemble/Disassemble | 0.0 | | |
| 5. Other | 0.0 | | |
| Total Request | 54.6 | | |

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Supply Management**

**WAR RESERVE MATERIAL (WRM)**
**STOCKPILE ($ in Millions)**

| FY 2021 | Total | WRM Protected | WRM Other |
|---|---|---|---|
| 1. Inventory BOP | 1,749.6 | 1,749.6 | 0.0 |
| 2. Price Change | 0.0 | 0.0 | 0.0 |
| 3. Reclassification | (46.1) | (46.1) | 0.0 |
| 4. Inventory Changes | | | |
| a. Receipts @ standard | 94.7 | 94.7 | 0.0 |
| (1) Purchases | 94.7 | 94.7 | 0.0 |
| (2) Returns from Customer | 0.0 | 0.0 | 0.0 |
| b. Issues @ standard | (30.9) | (30.9) | 0.0 |
| (1) Sales | 2.0 | 2.0 | 0.0 |
| (2) Returns to Suppliers | 0.0 | 0.0 | 0.0 |
| (3) Disposals | (32.9) | (32.9) | 0.0 |
| c. Adjustments @ standard | (358.7) | (358.7) | 0.0 |
| (1) Capitalizations | (236.5) | (236.5) | 0.0 |
| (2) Gains and losses | 0.0 | 0.0 | 0.0 |
| (3) Other Adjustments | (122.2) | (122.2) | 0.0 |
| 5. Inventory EOP | 1,404.6 | 1,404.6 | 0.0 |
| STOCKPILE COSTS | | | |
| 1. Storage | 0.0 | | |
| 2. Management | 0.0 | | |
| 3. Maintenance/Other | 0.0 | | |
| Total Costs | 0.0 | | |
| WRM BUDGET REQUEST (OBLIGATIONS AT COST) | | | |
| 1. Additional WRM | 44.3 | | |
| 2. Replenishment WRM | 2.0 | | |
| 3. Repair WRM | 0.0 | | |
| 4. Assemble/Disassemble | 0.0 | | |
| 5. Other | 0.0 | | |
| Total Request | 46.3 | | |

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Supply Management**

## WAR RESERVE MATERIAL (WRM)
## STOCKPILE ($ in Millions)

| FY 2022 | Total | WRM Protected | WRM Other |
|---|---|---|---|
| 1. Inventory BOP | 1,404.6 | 1,404.6 | 0.0 |
| 2. Price Change | 0.0 | 0.0 | 0.0 |
| 3. Reclassification | (10.0) | (10.0) | 0.0 |
| 4. Inventory Changes | | | |
| a. Receipts @ standard | 170.3 | 170.3 | 0.0 |
| (1) Purchases | 170.3 | 170.3 | 0.0 |
| (2) Returns from Customer | 0.0 | 0.0 | 0.0 |
| b. Issues @ standard | (48.0) | (48.0) | 0.0 |
| (1) Sales | 2.0 | 2.0 | 0.0 |
| (2) Returns to Suppliers | 0.0 | 0.0 | 0.0 |
| (3) Disposals | (50.0) | (50.0) | 0.0 |
| c. Adjustments @ standard | (183.5) | (183.5) | 0.0 |
| (1) Capitalizations | (40.0) | (40.0) | 0.0 |
| (2) Gains and losses | 0.0 | 0.0 | 0.0 |
| (3) Other Adjustments | (143.5) | (143.5) | 0.0 |
| 5. Inventory EOP | 1,329.4 | 1,329.4 | 0.0 |
| STOCKPILE COSTS | | | |
| 1. Storage | 0.0 | | |
| 2. Management | 0.0 | | |
| 3. Maintenance/Other | 0.0 | | |
| Total Costs | 0.0 | | |
| WRM BUDGET REQUEST (OBLIGATIONS AT COST) | | | |
| 1. Additional WRM | 34.8 | | |
| 2. Replenishment WRM | 2.0 | | |
| 3. Repair WRM | 0.0 | | |
| 4. Assemble/Disassemble | 0.0 | | |
| 5. Other | 0.0 | | |
| Total Request | 36.8 | | |

# Industrial Operations Introduction

The Industrial Operations activity group is comprised of thirteen government-owned and operated installation activities, each with unique core competencies. Industrial Operations promotes business-like behavior by relying on revenue from customers instead of direct appropriations to finance continuing operations. Customers purchase services from Industrial Operations activities. These services include, but are not limited to, repairing and upgrading equipment, producing weapons and munitions, and storing and demilitarizing materiel. The goal for the Industrial Operations activity is to generate enough revenue to recover the full cost of operations while breaking even over the long term.

**Mission:**

- ***Provide an organic industrial capability to conduct depot level repair and upgrade***
- ***Produce munitions and large caliber weapons***
- ***Store, maintain, and demilitarize materiel for the Department of Defense***

The core financial measures for Industrial Operations are the net operating result (NOR) and accumulated operating result (AOR). The NOR measures the activity's gain or loss within a single fiscal year and is used to monitor how closely the activity performs compared to its budget. The AOR measures the activity's accumulated gains and losses since the fund's inception. Rates are set during budget development to break even by bringing the AOR to zero over a budget cycle. This method returns accumulated gains through reduced rates and recovers accumulated losses through increased rates. The rates are set to:

- Recover the activity's costs such as payroll, supplies, contracts, equipment, inventory, depreciation, and maintenance
- Maintain a sufficient cash corpus to cover operating disbursements and six months of capital disbursements
- Break even over time
- Maintain a stable and foreseeable cost of doing business
- Reduce large fluctuations to the customer

The Industrial Operations activity relies heavily on customers funded by direct appropriations to support its operations. The activity synchronizes rates and budget assumptions with the appropriated funding levels of its customers. Reductions to customer appropriated funding requests impact the business by adversely affecting workloading decisions and projected staffing levels and may also affect equipment readiness of supported customers.

# Efficiencies and Business Process Improvements

An additive manufacturing specialist at Rock-Island Arsenal- Joint Manufacturing Technology Center brushing powder off completed ventilator housing parts

Cost efficiency is an inherent attribute of the AWCF. The revolving fund construct promotes total cost visibility, full cost recovery, and fosters a business-like, competitive atmosphere. In the same way that commercial businesses focus on their bottom line profit, Industrial Operations (IO) activities focus on their Net Operating Result and other indicators to gauge the efficiency of their operations. To increase efficiency and maintain their competitive edge, Industrial Operations activities have been fully engaged in cost-cutting and business process improvement initiatives for many years. Industrial Operations customers ultimately garner the benefit of these efficiencies through reduced turn-around times, lower prices, and increased throughput. Examples of these initiatives include:

- **Continuous Process Improvement (CPI):** The Army Materiel Command (AMC) has been aggressively embracing the concepts of Continuous Process Improvement (CPI) since 2002. CPI is an overarching concept, using many improvement tools, including Lean, Lean Six Sigma (LSS), Value Engineering (VE), Quality Management, and others, to positively impact manufacturing, maintenance, storage, distribution, and those military operations executing these critical missions. AMC's Industrial Operations (IO) has 25 certified Lean Six Sigma Master Black Belts. Additionally, the Army Quality management mission now falls under AMC. The CPI and Quality management missions have been integrated, developing a program synergy which is mutually advantageous to both product and process improvements, as well as Army Quality program requirements. These CPI efforts resulted in LSS and VE financial benefits in excess of $6 billion since FY 2007. These benefits come in the form of hard savings from budgeted programs, cost avoidances, and increased capacity (e.g. improved throughput), improving overall Army readiness. The IO activities either re-invest the financial benefits or pass them on to their customers in future budgets through lower rates.

- **International Organization for Standardization (ISO)**: ISO is a worldwide federation of national standards bodies that independently audit and certify companies and organizations for conformance with established standards. The Industrial Operations activities currently hold 23 ISO certifications for Quality Management Systems, International Aerospace Quality Systems, Environmental Management Systems, and Occupational Safety and Health Administration Systems. AMC is in the process of adopting ISO 45001, the world's first international standard for occupational health and safety geared toward senior management. ISO 45001 has the ultimate goal of helping businesses provide a healthy and safe working environment for their employees and everyone else who visits the workplace. Currently, Tobyhanna Army Depot (TYAD) is the only installation ISO 45001 certified.

- **Adaptable Workforce Structure**: IO activities employ an adaptable workforce structure to maintain flexibility in response to shifting workload requirements. Activities adjust the size of their workforce through the use of contractor, term, and temporary personnel to accommodate changes in workload.

- **Safety Improvements:** Safety is a high priority throughout AMC and leads to better morale, increased productivity and reduced operational costs. IO activities continue to participate in the Occupational Safety and Health Administration (OSHA) Voluntary Protection Program (VPP) and currently have five IO activities with an OSHA VPP Star[4] rating. These include Crane Army Ammunition Activity (CAAA), Letterkenny Army Depot (LEAD), McAlester Army Ammunition Plant (MCAAP), TYAD and Red River Army Depot (RRAD). VPP participants must maintain an effective safety and health management system that meets rigorous performance-based criteria and requires a total written commitment from labor to work safely.

- **Enterprise Resource Planning (ERP) Solutions**: The Logistics Modernization Program (LMP), an ERP solution, provides AMC and the Army with new and improved capabilities for logistics management and better cost performance while setting the stage for auditability. It provides real time updates and improved visibility of maintenance, production, and financial data when compared with legacy batch processes. It streamlines material/parts requisitioning and asset movements between Defense Logistics Agency (DLA) and the depots, improves visibility and accountability for inventory, improves collaboration in program planning,

[4] The Star Program is designed for exemplary worksites with comprehensive, successful safety and health management systems. Companies in the Star Program have achieved injury and illness rates at or below the national average of the respective industries.

and shortens the time to accept and negotiate programs between the Life Cycle Management Commands (LCMCs), depots, and customers.

- **Energy and Water Savings Programs**: AMC has instituted a command wide policy to identify performance standards to reduce consumption of energy and water resources, achieve energy security, and comply with DOD goals and objectives. Savings are being realized through the use of advanced metering programs, energy management and control systems, and implementation of energy conservation measures. Longer term energy savings are expected from renewable energy sources. IO activities use a variety of funding sources for energy projects which reduce energy consumption, improve energy efficiency, and increase energy security. Available funding sources include: AWCF IO, Energy Conservation Investment Program (ECIP), and third-party financing via Energy Savings Performance Contracts (ESPC) and Utility Energy Services Contracts (UESC).

# Functional Description

The AWCF Industrial Operations includes five depots, three arsenals, two munitions production facilities, and three storage sites. These sites perform the following mission functions:

- Provides depot level maintenance, repair, and modernization of weapon systems and component parts
- Manufactures, renovates, and demilitarizes materiel
- Produces munitions and large caliber weapons
- Performs a full range of ammunition maintenance services for DOD and U.S. allies
- Performs ammunition receipt, storage, and issue functions

In addition to the mission functions, ten of the thirteen activities provide installation base support for both internal operations and tenant activities. Corpus Christi Army Depot and Crane Army Ammunition Activity are tenants on Navy installations. The Rock Island Arsenal-Joint Manufacturing and Technology Center (RIA-JMTC) receives installation base support from the Army Installation Management Command (IMCOM) which, effective 1 March 2019, became a major subordinate command of Army Materiel Command (AMC).

Industrial Operations activities collaborate with the private sector through formal public-private partnership agreements to perform work or utilize facilities and equipment. Under authority granted by Title 10, United States Code, § 2474, these partnerships create opportunities for both the public and private sectors by capitalizing on each other's strengths and efficiencies. The benefits to the Army and its customers include: leveraging capacity; sustaining core maintenance capabilities; sharing of overhead costs; and enhancing technical expertise in the workforce. The benefits to private industry include access to specialized facilities, equipment and processes, and stimulating local economies. Current public-private partnership agreements are held with companies such as the Boeing Company, General Dynamics Land Systems, Sikorsky Aircraft Corporation, and Honeywell International.


Pine Bluff Arsenal employee seals M819 81mm red phosphorus smoke mortars on a Load Pack and Assemble production line

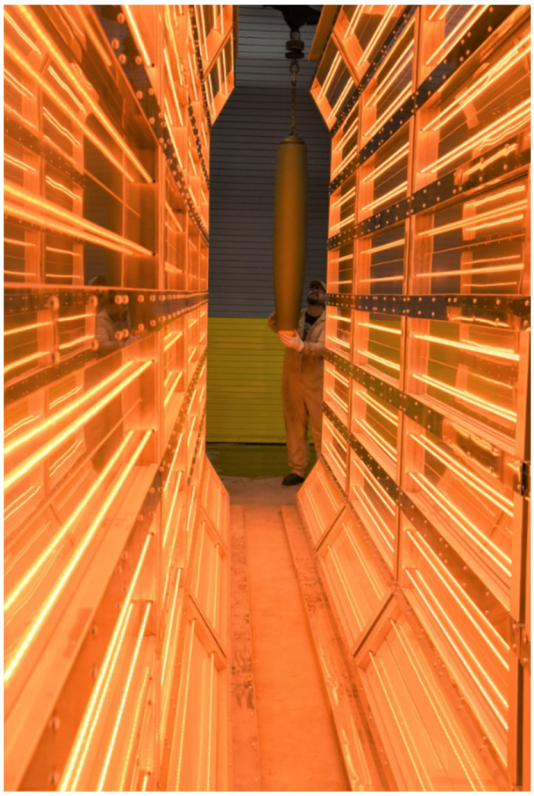
The five hard-iron maintenance depots (Anniston, Corpus Christi, Letterkenny, Red River, and Tobyhanna) and Pine Bluff Arsenal, Rock Island Arsenal-Joint Manufacturing and Technology Center, Sierra Army Depot, Tooele Army Depot, and Watervliet Arsenal are designated as Centers of Industrial and Technical Excellence (CITE) for the performance of core[5] maintenance workload in support of DOD and foreign allies. The CITE designation provides authority under Title 10, United States Code, § 2474 to partner with and lease facilities to industry on programs relating to core maintenance and technical expertise.

The Shingo Prize, administered by the Jon M. Huntsman School of Business at Utah State University, is the premier award for operational excellence world-wide. Since FY 2005, the Army Materiel Command has received 32 Shingo Prizes for various programs at its depots and arsenals, including eight at Red River Army Depot, seven at Tobyhanna Army Depot, nine at Letterkenny Army Depot, three at the Rock Island Arsenal-Joint Manufacturing and Technology Center, two at Anniston Army Depot and one at Corpus Christi Army Depot. This award recognizes industry leaders who promote world-class business and manufacturing processes that enable on-time delivery and customer satisfaction.

[5] Title 10, United States Code, § 2464. Core Logistics Capabilities - Government-owned and Government-operated equipment and facilities required to ensure a ready and controlled source of technical competence and resources necessary to ensure effective and timely response to a mobilization, national defense contingency situations, and other emergency requirements.

On-site examiners conduct Shingo Prize evaluations and score the following areas:

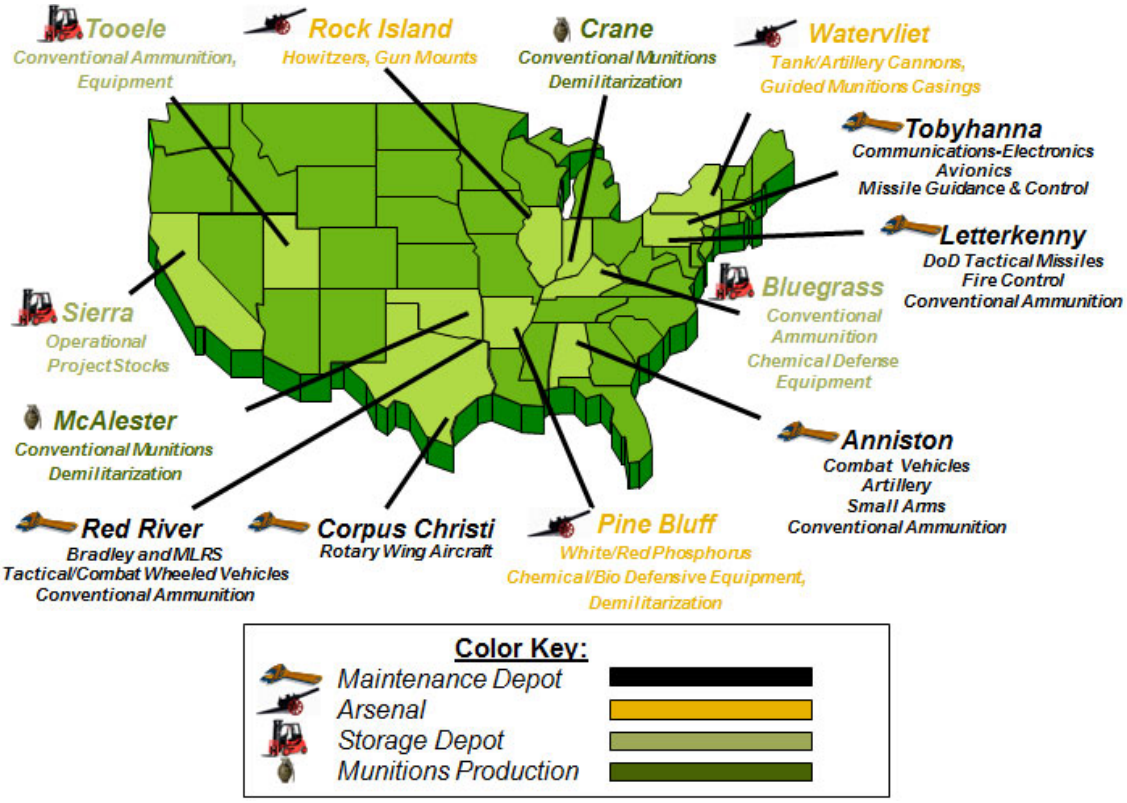
- Cost improvement
- Partnering practices
- Quality and results
- Innovation and development
- Environmental practices
- Vision and strategy
- Leadership & Empowerment
- Continuous improvement



An explosives handler at McAlester Army Ammunition Plant guides an MK82 general purpose bomb body to be dried and cured

# Activity Group Composition

Figure IO 1 - Industrial Operations Activity Group Composition




**Army Materiel Command** is located in Huntsville, Alabama and serves as the management command for the Industrial Operations activity group. Installations or activities in this group fall under the direct command and control of the Life Cycle Management Commands each aligned in accordance with the nature of its mission. The following are descriptions of the Industrial Operations activities and their major core mission functions.

## Anniston Army Depot (ANAD)

**Location:** Anniston, Alabama
**2020 Workforce:** 3,066

**Description**: A vital part of the community since opening in 1941, the depot's annual economic impact is estimated to be $1.0 billion and indirectly supports over 25,000 jobs in the Anniston area. It is the only Army depot capable of performing maintenance on both heavy and light-tracked combat vehicles (with the exception of the Bradley), and their components. ANAD is the Center of Industrial and Technical Excellence (CITE) for ground combat vehicles, assault bridging, small arms as well as towed and

self-propelled artillery systems, and rail equipment and non-tactical generators. Combat vehicles include the M1 Abrams Tank, M113 Family of Vehicles (FOV), Stryker FOV, M109 Paladin, Field Artillery Ammunition Support Vehicle (FAASV), M88 Recovery Vehicles, Joint Assault Bridge (JAB), Assault Breacher Vehicle (ABV), Armored Vehicle Launched Bridge (AVLB), and M9 Armored Combat Earthmover. The depot is actively engaged in the Reset of equipment returning from operations in Southwest Asia, to include performing maintenance on individual and crew-served weapons. As an Army and Department of Defense leader in Public-Private Partnership efforts since 1993, the depot has established more than 80 different partnerships with industry leaders, utilizing agreements such as direct sales, work share, and facility use.

## Blue Grass Army Depot (BGAD)

**Location:** Richmond, Kentucky
**2020 Workforce:** 912

**Description:** BGAD is a Strategic Mobility Power Projection ammunition depot with the mission to receive, store, issue, renovate, modify, maintain, and demilitarize conventional munitions for all DOD Services. BGAD stores and manages all Army Special Operations Forces ammunition. The depot is DOD's primary center for surveillance, receipt, storage, issue, testing, and minor repair of Individual Protection Chemical Defense Equipment. Additionally, BGAD maintains an Industrial Services capability providing receipt, storage, cutting, and fabrication of raw materials and metal parts for high visibility programs such as the Mine Resistant Ambush Protected (MRAP) family of vehicles. Anniston Munitions Center, located at Anniston Army Depot, is under the command and control of BGAD and serves as a multifunctional production facility, primary missile storage and maintenance depot, and as a storage and demilitarization depot for other conventional ammunition items.

## Corpus Christi Army Depot (CCAD)

**Location:** Corpus Christi, Texas
**2020 Workforce:** 2,860

**Description:** CCAD returns Army rotary wing aircraft and components to full service with uncompromising quality, at the lowest cost possible in the shortest amount of time. CCAD supports the Joint Warfighter (Army, Marines, Navy, and Air Force) Department of Homeland Security and partner nations through the Department of State. CCAD leads the Army Aviation accident investigation processes with subject matter expertise and reliable laboratory analysis anywhere in the world by a team of highly skilled artisans who assess, evaluate and repair forward deployed aircraft and components to include depot forward capabilities. The depot supports Active, Reserve and National Guard Soldiers in their

maintenance skills development with hands-on experience under the watchful eyes of depot artisans. Designated as the Center of Industrial and Technical Excellence for rotary wing aircraft, CCAD supports the Apache, Black Hawk, Chinook, and Pave Hawk helicopters as well as Unmanned Aerial Vehicles (UAV).

## Crane Army Ammunition Activity (CAAA)

**Location:** Crane, Indiana
**2020 Workforce:** 1,076

**Description:** CAAA is a Strategic Mobility Platform located in Crane, Indiana offering logistical support in receiving, storing, shipping, and surveillance of munitions. As a Munitions Center of Excellence, CAAA is the producer of pyrotechnic candle loads for mortar and artillery illumination in both the visible and infrared spectrums. CAAA supports the Navy with the production and renovation of advanced countermeasures for aircraft, and large caliber gun ammunition. Production and renovation capabilities include loading (cast and press) bombs and other munitions, missile warhead pressing, and a large variety of munitions components and assemblies. CAAA also has extensive demilitarization capabilities including steam out, high pressure washout, open burn/open detonation, and white phosphorous conversion. The CAAA machine center fabricates tools, dies, fixtures, gauges, production equipment and components. Commencing in FY 2018, rail operations at Naval Support Activity (NSA) Crane will be assumed by CAAA based on mission realignment. Letterkenny Munitions Center (LEMC), located on Letterkenny Army Depot in Chambersburg, Pennsylvania is under the command of CAAA. LEMC is also a Strategic Mobility Platform for both conventional ammunition and missile support. LEMC performs testing and minor repair for the Army Tactical Missile System and Guided Multiple Launch Rocket Missile systems, as well as several Air Force and Navy missile families. LEMC conducts demilitarization research and development, resource recovery and reutilization for missiles, container repair, and renovation of conventional munitions.

## Letterkenny Army Depot (LEAD)

**Location:** Chambersburg, Pennsylvania
**2020 Workforce:** 1,393

**Description:** LEAD performs maintenance, modification, storage, and demilitarization operations on tactical missiles and ammunition. It has unique tactical missile repair capabilities supporting a variety of DOD missile systems including the Patriot and its ground support and radar equipment. LEAD is the designated Center of Industrial and Technical Excellence for air defense and tactical missile ground support equipment. In addition, it supports repair maintenance on a multitude of generators. LEAD also

supports integration of Force Provider Soldier Support systems and provides installation support to attached organizations and assigned operating facilities.

## McAlester Army Ammunition Plant (MCAAP)

**Location:** McAlester, Oklahoma
**2020 Workforce:** 1,754

**Description:** MCAAP is located on 45,000 acres in southeastern Oklahoma. It has six ammunition production, maintenance and renovation complexes and is a major ammunition storage site for all branches of the Armed Forces. Additionally, the plant has nearly 2,300 storage magazines and six million square feet of covered explosive storage space. MCAAP produces and renovates conventional ammunition, bombs, warheads, rockets, missiles, and ammunition-related components; performs engineering and product assurance in support of production; and receives, stores, ships, demilitarizes, and disposes of conventional and missile ammunition and related items.

## Pine Bluff Arsenal (PBA)

**Location:** Pine Bluff, Arkansas
**2020 Workforce:** 659

**Description:** With a local economic impact exceeding $140 million annually, PBA produces, renovates, and stores more than 70 different conventional ammunition products ranging in caliber from 40 mm to 175 mm. Specialties include production of munitions containing payloads for smoke, non-lethal, riot control, incendiary, illumination, and infrared uses. Designated the Center of Industrial and Technical Excellence for Chemical and Biological Defense Equipment, PBA provides maintenance, upgrade, storage, and mission support for various mobile and powered Soldier support systems. PBA has strengthened its expertise by forming Public-Private Partnerships with mission related entities in the ammunition and chemical biological defense business sectors.

## Red River Army Depot (RRAD)

**Location:** Texarkana, Texas
**2020 Workforce:** 1,730

**Description:** RRAD's mission is to conduct ground combat and tactical systems sustainment maintenance operations, and related support services worldwide for the Army, other DOD components, and allied nations. RRAD is the Center of Industrial and Technical Excellence for the Bradley Fighting Vehicle (BFV), Multiple Launch Rocket System (MLRS), Tactical Wheeled Vehicles (light, medium, heavy, all

size trailers), Small Emplacement Excavator (SEE), and rubber products. Other supported systems include Army boats and bridges, cranes, material handling equipment, egress trainers, and a multitude of secondary items such as engines and transmissions. Red River Army Depot (RRAD) continues to support high levels of production for the Mine Resistant Ambush Protected (MRAP) All Terrain, Cougar, and MaxxPro vehicles to support fielding schedules for TACOM and the Marine Corps. RRAD specializes in forward deployment of maintenance operations in support of U.S. and allied military operations, and will project training and operations in support of Foreign Military Sales. The depot continuously engages in best business practices and process improvements designed to maximize quality throughput at optimal cost. RRAD supports operational transformation in alignment with its strategic plan with an eye to flexible solutions that will attract future business.

## Rock Island Arsenal-Joint Manufacturing and Technology Center (RIA-JMTC)

**Location:** Rock Island Arsenal, Illinois
**2020 Workforce:** 1,068

**Description:** RIA-JMTC is a heavy-metal manufacturer that specializes in artillery, weapon components, armor and mobile maintenance systems. RIA-JMTC is currently producing the M997A3 Ambulance, Line of Communication Bridge (prototype), Metalworking and Machining Shop Set, and manufacturing artillery parts, gun mounts, recoil mechanisms, small arms repair parts, aircraft weapon sub-systems, and weapons simulators. RIA-JMTC is the only multi-purpose and vertically integrated metal manufacturer in DOD and is a designated Center for Industrial and Technical Excellence for mobile maintenance systems, Add-on-Armor design, development, and prototype fabrication, and foundry operations. The center possesses the unique technical expertise and equipment to manufacture high quality and sustainable products. In May 2019 RIA-JMTC reached initial operating capability as the Center of Excellence for Advanced and Additive Manufacturing. In 2020 RIA-JMTC initiated a pilot program to partner with Digital Manufacturing and Design Innovation Institute (DMDII) to drive the digital future of manufacturing within Army.

## Sierra Army Depot (SIAD)

**Location:** Herlong, California
**2020 Workforce:** 1,327

**Description**: SIAD is a recognized multi-functional installation that provides rapid expeditionary logistics support and long-term sustainment solutions to the Army and the Joint Force. SIAD is designated by the Department of the Army as the Center for Industrial Technical Excellence (CITE) for all Petroleum and Water

Distribution Systems (PAWS). In addition, SIAD is the redistribution point for containers of secondary items returning from Southwest Asia, and provides equipment receipt and asset visibility for these items. SIAD has also been designated as the Army's main consolidation and redistribution center for the Clothing Management Office (CMO) to perform Brigade-level Organizational Clothing and Individual Equipment Reset operations. These unique operations clearly provide a readiness and operational value to the Army and the Nation through management and controlled redistribution of equipment to meet urgent demands and support to deploying Soldiers.

## Tobyhanna Army Depot (TYAD)

**Location:** Tobyhanna, Pennsylvania
**2020 Workforce:** 2,852

**Description:** TYAD is designated as the Center of Industrial and Technical Excellence for Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR), electronics, avionics, and missile guidance and control. TYAD's capabilities include full-spectrum logistics support for electronics sustainment, overhaul and repair, fabrication and manufacturing, engineering design and development, systems integration, technology insertion, modification, Foreign Military Sales, and Global Field support to our Joint Warfighters. The depot is also actively engaged in the Reset of equipment returning from operations in Iraq and Afghanistan. It provides installation support to attached organizations and assigned operating facilities.

## Tooele Army Depot (TEAD)

**Location:** Tooele, Utah
**2020 Workforce:** 477

**Description**: TEAD provides America's joint fighting forces with munitions and Ammunition Peculiar Equipment (APE) in support of military missions before, during, and after any contingency. The depot receives, stores, issues, renovates, modifies, maintains, and destroys conventional munitions for all of DOD. TEAD is designated as the Center of Industrial and Technical Excellence for APE. TEAD has assumed Command and Control over the APE function that is performed at McAlester, OK. This function will be a satellite of TEAD but remain located in McAlester and named Ammunition Equipment Satellite (AES). AES was integrated into LMP beginning in FY 2017. TEAD is the life cycle engineering depot for design, development, manufacturing and fielding of munitions systems and APE throughout the world.

## Watervliet Arsenal (WVA)

**Location:** Watervliet, New York
**2020 Workforce:** 777

**Description:** WVA produces armaments, mortars, recoilless rifles, howitzers and is recognized as the premier cannon-maker for the Army. This includes all life cycle support elements from research and development through prototype, manufacturing, testing support, legacy system support, and technical expertise. The guns manufactured at WVA provide the firepower for the Army's main battlefield tank, the M1A1 Abrams. WVA has established several unique and valuable partnerships with manufacturing industries resulting in increased workload, absorption of excess capacity, industry supplied capital improvements, cost sharing, and has recently gained American Bureau of Ship Building certification for WVA's forging process.

# Budget Highlights

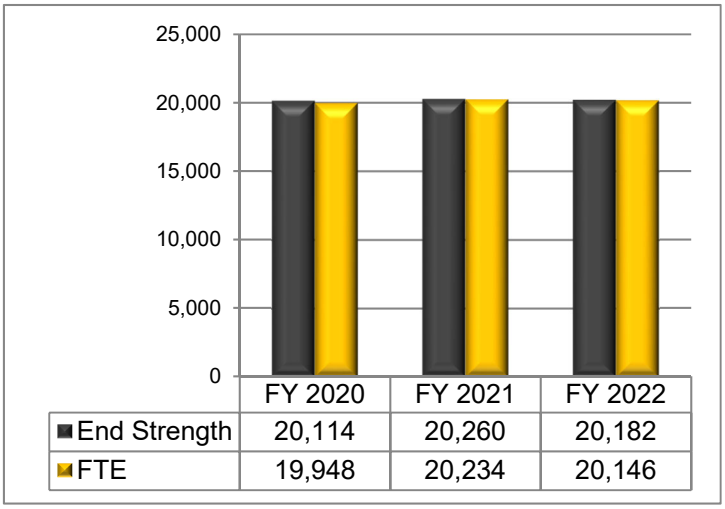
## Assumptions

The budget reflects workload assumptions developed in coordination with customers that support both baseline and Reset requirements and incorporates historical trend analysis along with Covid-19 impacts when developing future workload requirements. However, as unit rotations and weapon system delivery schedules shift, annual projections can change significantly between when budgets are developed and actual maintenance occurs. To offset these risks, the Industrial Operations activity remains poised to increase or decrease output in order to accommodate customers' changing requirements.

## Personnel

Civilian end-strength represents the number of personnel employed at the end of each fiscal year. Full time equivalents represent the manpower level of effort necessary to accomplish the projected workload on an annual basis. The Industrial Operations labor pool includes a mix of permanent, temporary, and term-appointed employees, in addition to contract labor, which allow for workforce flexibility to accommodate changing requirements.

Chart IO 1 - Personnel

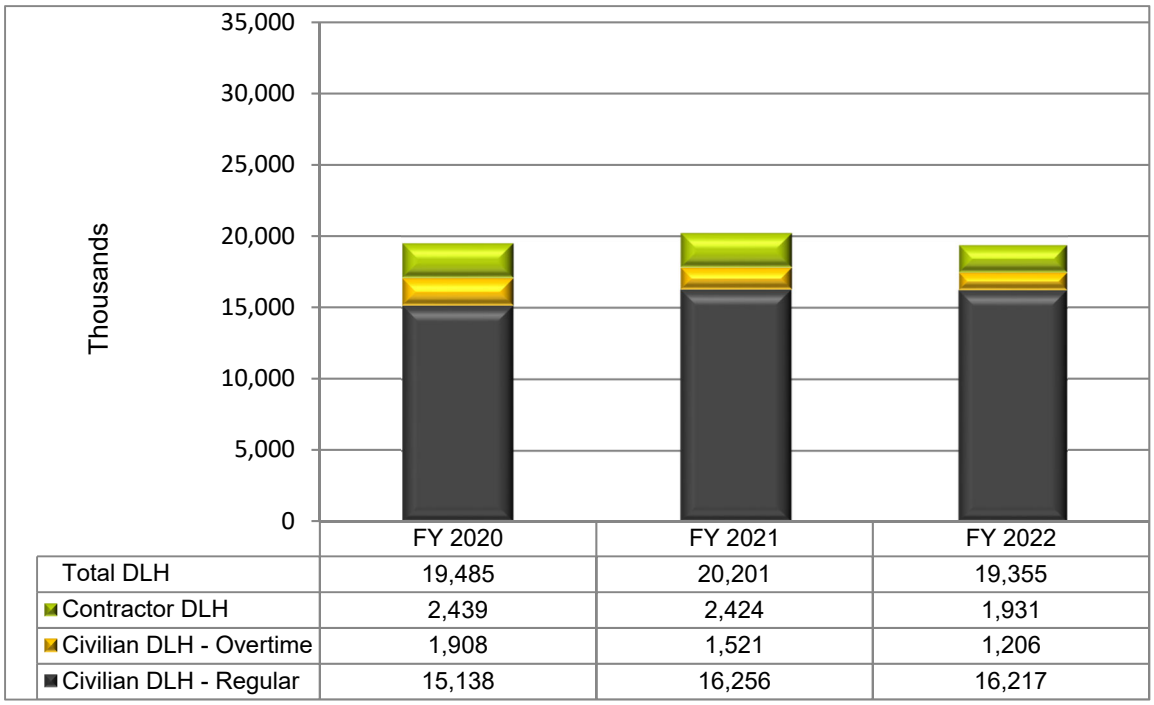



| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| End Strength | 20,114 | 20,260 | 20,182 |
| FTE | 19,948 | 20,234 | 20,146 |

Maintaining a trained and ready workforce is critical to this labor intensive business. Industrial Operations activities engage in various workforce revitalization efforts to include interns, apprenticeship programs and a Pathways program which offers clear paths to Federal internships for students from high school through post-graduate school and to careers for recent graduates. Due to the specialized nature of the work and skill level requirements, training may require two to three years before an employee is able to perform specific tasks without supervision. In addition to civilian personnel, 25 military personnel are assigned to Industrial Operations (IO) activities in FY 2022.

# Direct Labor Hours (DLH)

Chart IO 2 - Direct Labor Hours



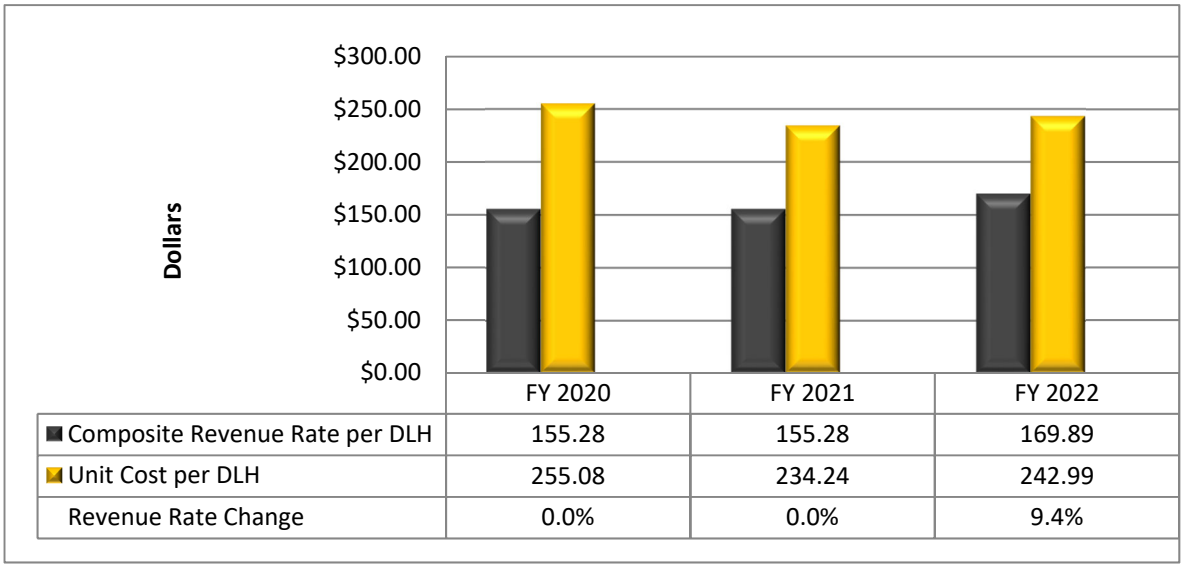

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Total DLH | 19,485 | 20,201 | 19,355 |
| Contractor DLH | 2,439 | 2,424 | 1,931 |
| Civilian DLH - Overtime | 1,908 | 1,521 | 1,206 |
| Civilian DLH - Regular | 15,138 | 16,256 | 16,217 |

Total direct labor hours represent the number of hours required to complete the Industrial Operations direct mission workload. Direct labor hours remain relatively stable from year to year as workload received from previous years is completed. IO activities remain prepared to increase overtime and contractor DLHs in the event workload estimates increase.

# Direct Labor Hour Rate

The composite revenue rate is an aggregate hourly rate established in the budget cycle and used to price rate-stabilized workload. It is comprised of direct labor and material costs, overhead costs (mission indirect and non-mission indirect costs), and accumulated operating result adjustments that are designed to return gains or recover losses. In contrast to rate-stabilized workload, cost reimbursable workload represents workload that is prototype in nature or has very little repair history. It is not included in the stabilized rate calculation until sufficient repair information has been established. Due to new weapon systems in the Army's inventory and modernization efforts the majority of the workload at the depots is cost reimbursable and not burdened with the return or gain of prior years' profits or losses. The composite revenue rate calculation is complex and influenced by several factors: 1) commodity mix of the workload planned (labor intensive, material intensive or both); 2) the amount of gains to be returned or losses to be recovered over the budget years; 3) the amount of stabilized direct labor hours available to return gains or recover losses; and 4) the number of total direct labor hours available to distribute overhead cost (stabilized and non-stabilized workload). A change to the composite revenue rate directly affects the total revenue and new order values for the budget year. The FY 2022 composite revenue rate is $169.89 and is set to lose $128.3 million of prior year accumulated operating result (AOR), leaving the IO business with an ending AOR of zero. Unlike the composite revenue rate, which is adjusted for AOR and applied to new rate stabilized workload, the unit cost per direct labor hour represents total costs of work performed on both prior year and current year orders. The unit cost does not include adjustments for AOR.

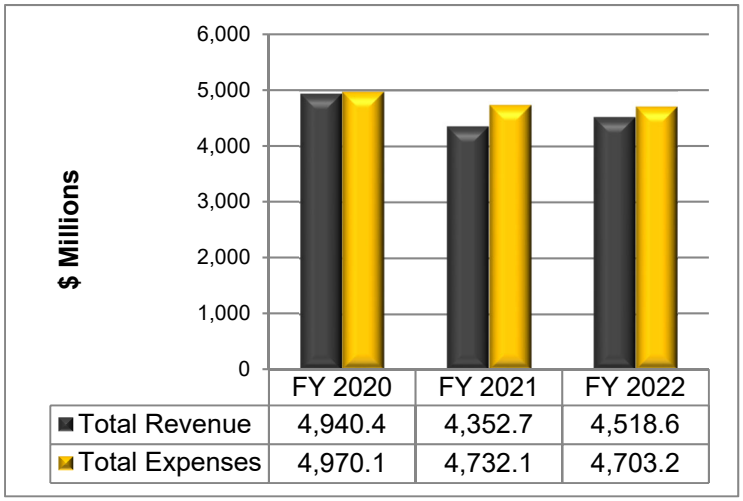
Chart IO 3 - Direct Labor Hour Rate




| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Composite Revenue Rate per DLH | 155.28 | 155.28 | 169.89 |
| Unit Cost per DLH | 255.08 | 234.24 | 242.99 |
| Revenue Rate Change | 0.0% | 0.0% | 9.4% |

# Revenue and Expenses

Chart IO 4 - Revenue and Costs




| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Total Revenue | 4,940.4 | 4,352.7 | 4,518.6 |
| Total Expenses | 4,970.1 | 4,732.1 | 4,703.2 |

The Industrial Operations revenue amount represents earnings from work performed on customer equipment plus any direct appropriations designated to IO. Total expenses cover full costs, including material, labor, storage, and other direct or indirect costs associated with the products or services being provided. Revenue estimates in FY 2021 include impacts to the industry from Covid-19 safety measures, showing a decrease due to accommodations for social distancing and leave allowances. Revenue and expense projections in FY 2022, however, remain high as the installations work off prior year work as well as new orders. Revenue in each year reflects the return of operational gains back to customers. Revenue and expenses are displayed in more detail on Exhibit Fund 14, *Revenue and Costs*.

# Operating Result

The Net Operating Result (NOR) represents the difference between revenue and expenses within a fiscal year. The recoverable NOR in FY 2021 includes $125 million in direct appropriations provided to maintain competitive rates at the three arsenals. In addition, in FY 2020, FY 2021 and FY 2022 the recoverable NOR includes $57.5 million, $32.6 million, and $26.9 million respectively, for Industrial Mobilization Capacity (IMC) costs associated with maintaining facilities to meet mobilization or war surge capacity. The Army also received $9 million in FY 2020 for a pilot program partnership with digital manufacturing institute efforts in conjunction with Rock Island Arsenal- Joint Manufacturing and Technology Center. The Accumulated Operating Result (AOR) represents the summation of all operating gains or losses since activity group inception along with any prior period adjustments. The Recoverable NOR, Deferred AOR, and AOR are displayed in the following table and on Exhibit Fund 14, *Revenue and Costs*.

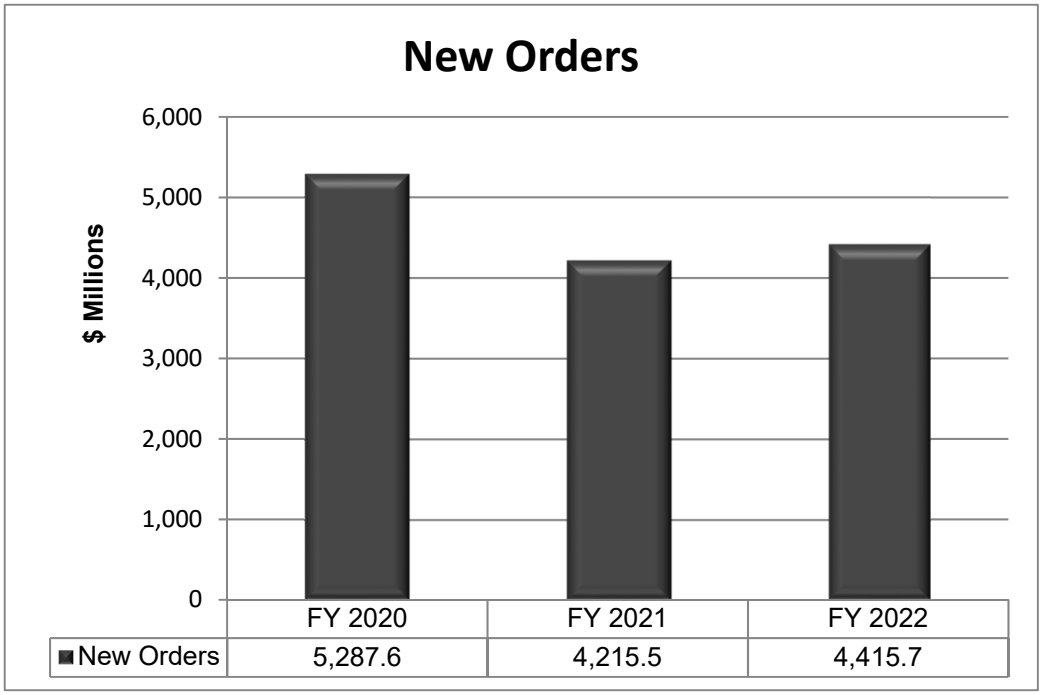
Table IO 1 - Operating Results

| ($ Millions) | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Recoverable Net Operating Result | 62.8 | (328.0) | (128.3) |
| Deferred Accumulated Operating Result | 0.0 | 0.0 | 0.0 |
| Accumulated Operating Result | 456.3 | 128.3 | (0.0) |

# New Orders

Industrial Operations activities develop workload projections based on close coordination with customers and their delivery schedule requirements. With fluid requirements and fiscal uncertainty, accurately predicting workload two to three years in advance has proven difficult. Covid-19 impacts to training schedules and vendor parts delivery have also been included in FY 2021 and FY 2022, lowering the expected new order amounts. The budget includes workload assumptions associated with base program requirements and anticipated Reset workload. The Reset program ensures Army equipment is restored to a level of combat capability commensurate with a unit's future mission. The projected workload in FY 2022 is commensurate with customer projections and budgeted depot maintenance requirements. Exhibit Fund 11, *Source of New Orders and Revenue*, displays total new order estimates by fund category.

Chart IO 5 - New Orders



# Carryover

Carryover, or unfilled orders, represents the dollar value of the production orders (parts, labor, and overhead) that have been ordered and funded by customers but not completed by the industrial activities at the end of each fiscal year. Carryover is necessary; it leads to better planning, better decision making, and cost efficiencies at the depots and arsenals. It provides lead time to assemble necessary workforce skill sets, to establish supply chains, and to coordinate workload routing. Carryover in some instances is unavoidable as long lead parts take time to manufacture and ship. Carryover also prevents production line stoppages and ensures the activities have funded work to provide a smooth transition between fiscal years.

## Background

At the request of Congress, the Government Accountability Office (GAO) conducted a performance audit from September 2018 through July 2019, producing report, GAO-19-452. This report follows language in the Fiscal Year 2018 National Defense Authorization Act which states that DOD's calculation of allowable carryover has indirectly affected military readiness and the ability of the depots to sustain core workload. The House Committee on Armed Services directed the Secretary of Defense to submit a report providing information on the existing carryover calculation and recommendations for modifying the current carryover metric, among other issues.

In response, DOD issued a report to Congress in April 2018 that explained DOD's current carryover metric and an alternative metric proposed by the Office of the Secretary of Defense (OSD), to which Army non-concurred. The GAO report: (1) describes carryover for fiscal years 2007 through 2018, and the reasons for it; (2) evaluates the carryover metric options DOD considered, whether they address the attributes of quality information, and the implications associated with each option; and (3) describes private industry and foreign military policies for determining allowable carryover, if any. The GAO report recommended that the Secretary of Defense should ensure that the Undersecretary of Defense (Acquisition and Sustainment) develop and adopt a depot maintenance carryover metric that provides *reliable, complete, consistent, and appropriate* information.

## Pilot Calculation

OUSD(A&S) approved an Army requested two-year Pilot Calculation methodology which allows for exclusion of on-hand depot, end of year inventory. The Army's Logistics Modernization Program, an SAP compliant ERP in use since 2011, recognizes material revenue only after the material is consumed on the plant assembly line; legacy systems in use before LMP allowed material revenue recognition upon delivery and acceptance at the depot prior to

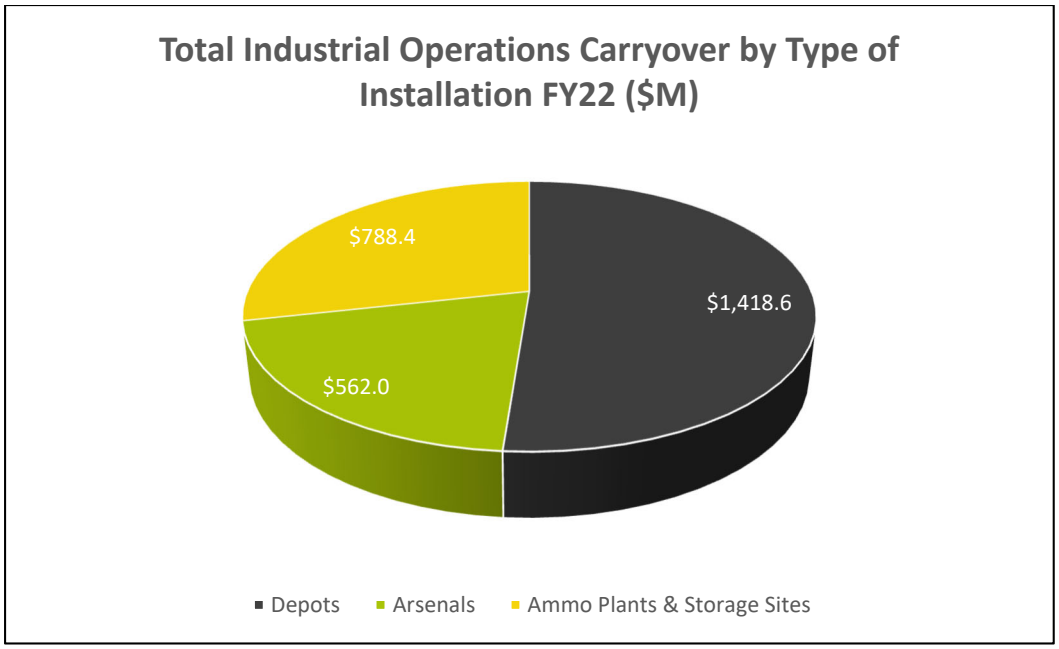
consumption on the assembly line. Excluding on-hand (delivered), end of year inventory from the DOD preferred carryover calculation provides a *consistent* accounting of on-hand inventory as existed pre-LMP. This authorized exclusion has been granted as a Pilot program for the next two years. The Pilot will allow the Department to validate/verify that the Army's ERP accurately accounts for expenses incurred in the appropriate budget year using generally accepted accounting principles for material inventory. The carryover calculation will be reviewed at the completion of the Pilot to determine if any adjustments to the policy are appropriate. While this critical exclusion is authorized in the pilot calculation, the carryover budget exhibit, Fund-11a, revised by OUSD(C), will continue to display carryover without excluding on-hand, depot end of year inventory. The below table displays the Army's carryover position for all 13 installations using the Pilot Calculation methodology. Applying the exclusion of material inventory on hand reduces the carryover by ~ 25 percent.

## Multi-Year Appropriations – Analysis

The impact of multi-year appropriations orders on carryover was not requested by Army in the Carryover Pilot Calculation. Neither the DOD calculation nor the Pilot Calculation provide exceptions for activities that accept customer orders citing appropriations that are not intended for completion in the first year, such as

| Industrial Operations- Pilot Calculation ($ in Millions) | | | |
|---|---|---|---|
| **Carryover Calculation Categories** | **FY20** | **FY21** | **FY22** |
| 1. Total New Orders | 5,287.6 | 4,215.5 | 4,415.7 |
| 2. Net Carry-in Orders | 3,719.4 | 4,097.8 | 3,849.9 |
| **3. Total Gross Orders (Lines 1 + 2)** | **9,007.0** | **8,313.3** | **8,265.7** |
| 4. Revenue | 4,645.2 | 4,195.1 | 4,491.7 |
| 5. Material Inventory EOP | 969.7 | 1,012.0 | 1,005.5 |
| 6. Carryout **(Line 3 - Line 4 and Line 5)** | **3,392.1** | **3,106.2** | **2,768.5** |
| 7. Workload Completed per Month **(Line 4 ÷ 12)** | **387.1** | **349.6** | **374.3** |
| **8. Months of Carryover (Line 6 ÷ Line 7)** | **8.8** | **8.9** | **7.4** |

procurement accounts (3 years) and research and development accounts (2 years). The preponderance of customer orders of the Army's Arsenals, Ammunition Plants, and Storage Sites is multi-year funding which account for forty-nine percent of FY22 carryover.




The above chart displays FY 2022 carryover by type of installation. Approximately 50 percent of carryover is located at Army's depots with the remainder located at Arsenals and Ammunition/Storage activities. Weapon systems such as UH-60 RECAP / REBUILD at CCAD have a Recapitalization & Conversion timeline of 18–24 months for completion and UH-60 RECAP / Crash Battle Damage at CCAD have a repair timeline of 24-36 months for completion. Repair Cycle Time is dependent upon factors such as materiel supportability and aircraft fatigue that could increase mentioned timelines. These types of remanufacturing processes cannot be completed within 12-15 months. Applying the carryover calculations to only activities that perform Depot Maintenance functions would more fairly calculate carryover based on annual funding. A description of work performed at each installation is located on pages 50 through 56 of this justification book.

## Depot Maintenance Carryover

Department of Army's Depot Maintenance carryover projections for the FY 2022 Budget Estimate utilizes the Pilot Calculation and is based on the five Depot Maintenance Activities (ANAD, CCAD, LEAD, RRAD, and TYAD). Removing Arsenals, Ammunition Plants, and Storage Sites from Depot Maintenance carryover calculation utilizes a calculation to measure execution of annual appropriations.

Depot Maintenance Carryover is provided below:

| Depot Maintenance Only- Pilot Calculation ($ in Millions) | | | |
|---|---|---|---|
| **Carryover Calculation Categories** | **FY20** | **FY21** | **FY22** |
| 1. Total New Orders | 3,899.5 | 2,921.8 | 2,941.9 |
| 2. Net Carry-in Orders | 2,217.2 | 2,596.3 | 2,425.7 |
| **3. Total Gross Orders (Lines 1 + 2)** | **6,116.7** | **5,518.1** | **5,367.7** |
| 4. Revenue | 3,360.2 | 2,925.3 | 3,069.7 |
| 5. Material Inventory EOP | 793.0 | 884.9 | 879.4 |
| 6. Carryout **(Line 3 - Line 4 and Line 5)** | **1,963.5** | **1,707.9** | **1,418.6** |
| 7. Workload Completed per Month **(Line 4 ÷ 12)** | **280.0** | **243.8** | **255.8** |
| **8. Months of Carryover (Line 6 ÷ Line 7)** | **7.0** | **7.0** | **5.5** |

## Managing Carryover

The Army is focused on further reducing carryover by leveraging policy and process improvements aimed at increasing production, improving customer-provider communication, and strengthening controls over the acceptance of new orders. These initiatives were developed in response to the Government Accountability Office's FY 2013 carryover audit recommendations.[6] The policy for accepting new workload requires:

- The customer and the executing industrial activity to assess the *availability of skilled labor* to execute the workload
- The viability of the *supply chain and availability of parts*
- The availability of *tools and equipment needed during production*
- The availability of *unserviceable assets*
- The scheduled *requirements per month*
- The availability of *funding to support the production*

All AWCF activities have fully implemented this criteria for accepting new orders.

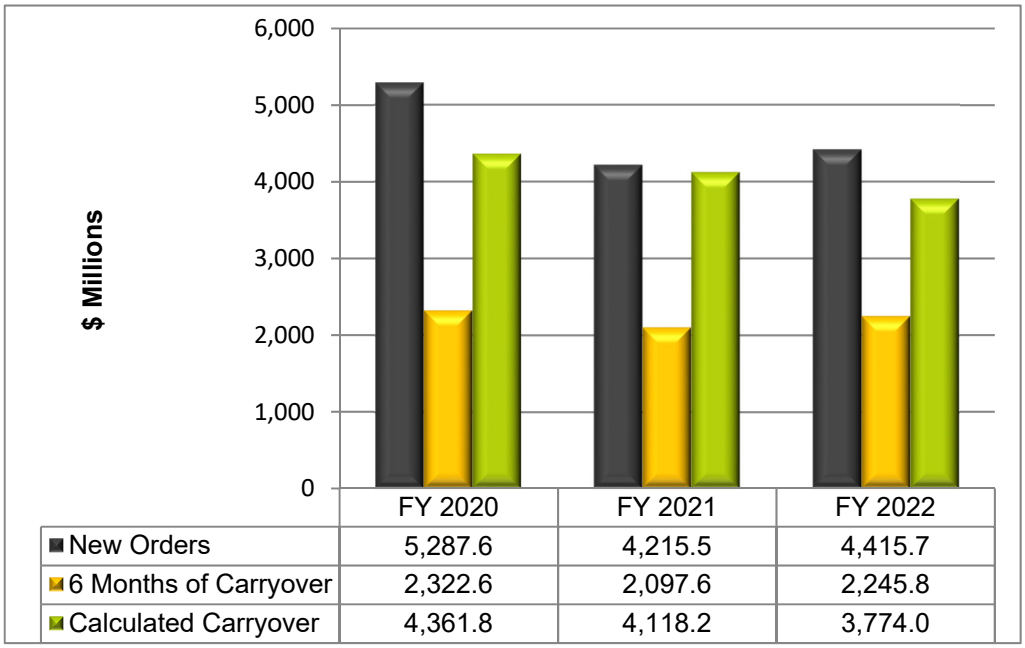
Additionally, Army program acquisition managers are required to identify organic procurement funded requirements to the appropriate Life Cycle Management Command (LCMC) no later than the end of the first quarter of the year of execution. The Army's goal is to ensure procurement funded depot maintenance workloads are inducted into the depots no later than the end of the second quarter of the fiscal year. The intent is to reduce orders placed late in the fiscal year that increase carryover.

Army leadership is committed to monitoring carryover and production goals on a recurring basis through senior leader forums and quarterly Organic Industrial Base

[6] U.S. Government Accountability Office, *Army Industrial Operations: Budgeting and Management of Carryover Could Be Improved*, GAO-13-499 (Washington, DC, 2013).

Corporate Boards. The Army plans to reduce carryover by $587.8 million at the end of FY 2022. Carryover as it is displayed on the OSD preferred Exhibit Fund 11, *Source of New Orders and Revenue*, and Exhibit Fund 11a, *Carryover Reconciliation*.

Chart IO 6 - New Orders and Carryover




| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| New Orders | 5,287.6 | 4,215.5 | 4,415.7 |
| 6 Months of Carryover | 2,322.6 | 2,097.6 | 2,245.8 |
| Calculated Carryover | 4,361.8 | 4,118.2 | 3,774.0 |

# Performance Measurements

Performance measurements and goals for the Industrial Operations activity group include Recoverable Net Operating Result (NOR) and Productive Yield. FY 2020 actual results and projections for FY 2021 and FY 2022 are shown in the following table.

Table IO 2 - Performance Measurements

| Measurements/Goals | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Recoverable Net Operating Result | 62.8 | (328.0) | (128.3) |
| Productive Yield | 1,473 | 1,570 | 1,578 |

The customer rates in the budget return prior year gains, as reflected by the negative NOR in FY 2021.

Productive Yield represents the average number of regular direct labor hours for each full time equivalent position involved in production and is an indicator of whether direct labor employees can support projected workload. The historical goal for productive yield has been 1,615 direct labor hours per work position and represents total available work hours after holidays, leave, and training are

removed. The productive yield projections for FY 2021 and FY 2022 are within expected parameters.

# Appropriations

The Industrial Operations (IO) activity received Direct Appropriations of $129 million in FY 2020 and $125 million in FY 2021 to maintain competitive rates at the Army's arsenals plus an additional $100 million for COVID-19 expenses mitigation. The Army also received $9 million in FY 2020 for a pilot program to partner with digital manufacturing institute efforts in conjunction with Rock Island Arsenal- Joint Manufacturing and Technology Center. In FY 2020, FY 2021, and FY 2022 the Army requests $57.5 million, $32.6 million, and $26.9 million respectively, for Industrial Mobilization Capacity (IMC). IMC funding sustains industrial base equipment required for mobilization that is idle for more than 80 percent in any one month but used at least once during the year. Army Organic Industrial base (OIB) workload has steadily declined over the past ten years resulting in some equipment being utilized at these lower rates. The Army requires IMC funding to sustain this equipment, enabling the OIB to rapidly surge in support of a future mobilization.

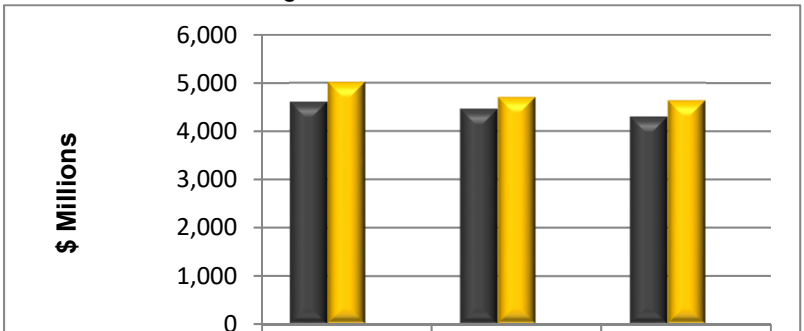
Table IO 3 – Appropriations

| ($ Millions) | FY 2020 Actuals | FY 2021 Enacted | FY 2022 Request |
|---|---|---|---|
| Arsenal Sustainment Initiative | 129.0 | 125.0 | 0.0 |
| Digital Manufacturing Pilot Program | 9.0 | 0.0 | 0.0 |
| AWCF Cash Infusion | 100.0 | 0.0 | 0.0 |
| Industrial Mobilization Capacity | 57.5 | 32.6 | 26.9 |
| **Total Appropriated Funds** | **295.5** | **157.6** | **26.9** |

# Collections, Disbursements, and Outlays

Collections are calculated based on projected revenue and changes in accounts receivable. Disbursements are projected based on monthly operating expenses, changes in accounts payable, and Capital Investment Program obligations. Net outlays reflect the return of accumulated operating result to customers. Beginning in FY 2016, collections and disbursements between the Industrial Operations and Supply Management activity groups will process for all internal work performed.

Chart IO 7 - Cash Management

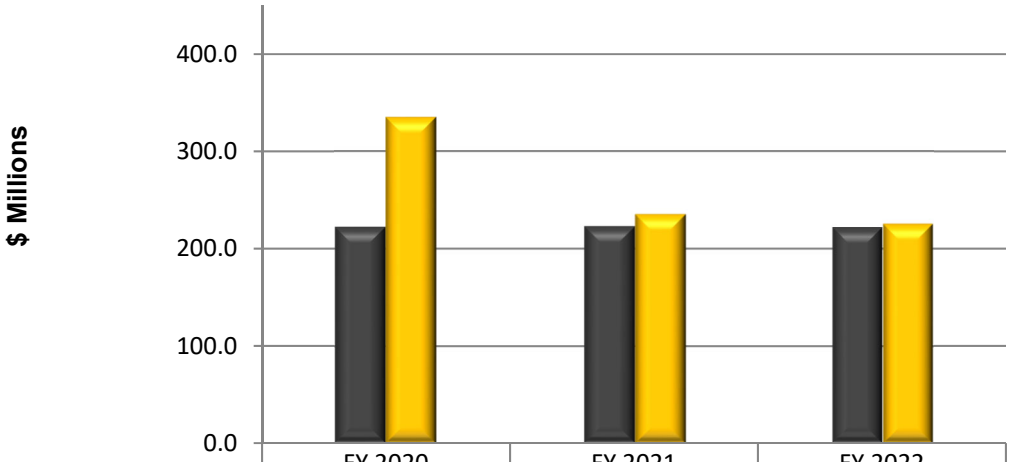



| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Collections | 4,604.6 | 4,455.9 | 4,291.7 |
| Disbursements | 5,012.8 | 4,696.6 | 4,627.8 |
| Net Outlays | 408.3 | 240.7 | 336.1 |

# Minimum Capital Investment for Certain Depots and Arsenals

The National Defense Authorization Acts for FY 2007, FY 2009, and FY 2012 require the five Army maintenance depots (Anniston, Red River, Letterkenny, Tobyhanna, and Corpus Christi), the three arsenals (Rock Island, Pine Bluff, and Watervliet) and Tooele Army Depot to invest the equivalent of at least six percent of funded workload.

Chart IO-8 – Minimum Capital Investment




| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Investment Percentage | 9.0% | 6.3% | 6.1% |
| Investment Target | 222.0 | 222.7 | 221.7 |
| Investment Actual/Request | 334.8 | 235.6 | 225.7 |
| Over / (Under) | 112.7 | 12.9 | 4.0 |

The chart displays the total investment target and total investment amount planned. Since the minimum capital investment became law, the Army has invested over $4.0 billion, representing an average of 7.0 percent of revenue spent on capabilities and infrastructure. Industrial Operations (IO) activities review future production and infrastructure requirements and project return on investment when developing capital budgets. The Army is committed to investing six percent in each year. Exhibit Fund 6, *Depot Maintenance 6% Capital Investment* provides investment details by category for each activity.

# Army Working Capital Fund
# Fiscal Year (FY) 2022 Budget Estimates
# Industrial Operations

## Revenue and Costs
## ($ in Millions)

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| **Revenue** | | | |
| Gross Sales: | 4,645.2 | 4,195.1 | 4,491.7 |
| Operations | 4,441.1 | 4,046.6 | 4,352.1 |
| Depreciation excluding Major Construction | 204.2 | 148.5 | 139.6 |
| Other Income (DWCF Direct Appropriation) | 295.5 | 157.6 | 26.9 |
| Other Income (Other) | (0.3) | | |
| **Total Income:** | 4,940.4 | 4,352.7 | 4,518.6 |
| **Costs** | | | |
| Salaries and Wages: | 2,006.6 | 2,031.6 | 2,064.9 |
| Military Personnel Compensation & Benefits | 4.3 | 3.6 | 3.8 |
| Civilian Personnel Compensation & Benefits | 2,002.3 | 2,028.0 | 2,061.1 |
| Travel & Transportation of Personnel | 20.4 | 30.4 | 29.9 |
| Materials & Supplies (For Internal Operations) | 1,683.5 | 1,375.0 | 1,526.2 |
| Equipment | 129.9 | 93.8 | 74.9 |
| Other Purchases from Revolving Funds | 115.5 | 100.4 | 96.3 |
| Transportation of Things | 6.5 | 9.6 | 8.1 |
| Depreciation | 204.2 | 148.5 | 139.6 |
| Printing and Reproduction | 0.9 | 1.4 | 1.1 |
| Advisory and Assistance Services | 69.6 | 62.1 | 58.0 |
| Rent, Communication, Utilities, & Misc. Charges | 102.8 | 130.5 | 106.6 |
| Other Purchased Services | 630.3 | 748.8 | 597.7 |
| **Total Costs:** | 4,970.1 | 4,732.1 | 4,703.2 |
| **Operating Result** | (29.8) | (379.4) | (184.6) |
| Other Changes Affecting NOR: | 92.6 | 51.4 | 56.3 |
| Non-Recoverable Expenses (Unfunded Costs) | 92.6 | 51.4 | 56.3 |
| Non-Recoverable Expenses (FRM) | | | |
| **Recoverable Net Operating Result** | 62.8 | (328.0) | (128.3) |
| Other Changes Affecting AOR | | | |
| a. AOR Beginning of Year (Unadjusted) | 396.6 | 456.3 | 128.3 |
| b. +/- Prior Year Adjustments | (3.2) | | |
| c. Equals AOR BOY (Adjusted) | 393.4 | 456.3 | 128.3 |
| d. +/- Net Operating Result | 62.8 | (328.0) | (128.3) |
| e. Deferred AOR | | | |
| f. Equals Recoverable AOR EOP | 456.3 | 128.3 | (0.0) |

# Army Working Capital Fund
# Fiscal Year (FY) 2022 Budget Estimates
# Industrial Operations

## Source of New Orders and Revenue
## ($ in Millions)

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| **1. New Orders** | | | |
| a. Orders from DoD Components: | | | |
| Department of Army | | | |
| Operations & Maintenance, Army | 1,742.5 | 1,639.6 | 1,310.3 |
| Operations & Maintenance, ARNG | 135.1 | 185.3 | 139.7 |
| Operations & Maintenance, AR | 39.4 | 49.2 | 23.9 |
| Subtotal, O&M: | 1,917.0 | 1,874.1 | 1,473.9 |
| Aircraft Procurement | 83.1 | 44.3 | 43.9 |
| Missile Procurement | 45.9 | 38.2 | 57.6 |
| Weapons & Tracked Combat Vehicles | 424.2 | 419.5 | 527.3 |
| Procurement of Ammunition | 177.4 | 250.1 | 338.9 |
| Other Procurement | 206.1 | 262.9 | 348.2 |
| Subtotal, Procurement: | 936.7 | 1,015.0 | 1,315.8 |
| RDTE | 40.3 | 25.6 | 24.3 |
| BRAC | 0.1 | | |
| Family Housing | 1.7 | 0.7 | 0.6 |
| Military Construction | | | 6.7 |
| Chem Agents & Munitions Dest, Army | 20.1 | 21.4 | 20.7 |
| Other | 0.3 | 0.0 | 0.0 |
| Subtotal, Other Army: | 62.5 | 47.7 | 52.4 |
| Subtotal, Department of Army: | 2,916.1 | 2,936.7 | 2,842.1 |
| Department of Air Force O&M | 96.9 | 92.7 | 110.9 |
| Department of Air Force Investment | 147.6 | 158.4 | 176.6 |
| Department of Navy O&M | 41.4 | 30.8 | 38.4 |
| Department of Navy Investment | 22.3 | 30.8 | 24.2 |
| US Marines O&M | 49.7 | 42.6 | 61.0 |
| US Marines Investment | 1.7 | 9.1 | 14.3 |
| Other Department of Defense | 148.5 | 110.7 | 171.3 |
| Subtotal, Other DoD Services: | 508.1 | 475.1 | 596.7 |
| b. DWCF: | | | |
| Industrial Operations, Army | 25.7 | 21.0 | 21.2 |
| Supply Management, Army | 1,375.2 | 564.7 | 546.0 |
| Supply Management, Air Force | 39.8 | 64.0 | 53.9 |
| Supply Management, Navy | 19.6 | 21.9 | 24.1 |
| Supply Management, Marine Corps | 3.4 | | 0.0 |
| DECA | 0.1 | 0.1 | |
| DFAS | 0.0 | 0.5 | 0.5 |
| DISA | 3.2 | 3.2 | 3.1 |
| DLA | 20.2 | 15.0 | 14.9 |
| TRANSCOM | 0.2 | 0.1 | 0.7 |
| Other | | | 0.0 |
| Subtotal, DWCF: | 1,487.5 | 690.4 | 664.4 |

## Army Working Capital Fund
## Fiscal Year (FY) 2022 Budget Estimates
## Industrial Operations

### Source of New Orders and Revenue
### ($ in Millions)

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| c. Total DoD | 4,911.7 | 4,102.3 | 4,103.2 |
| d. Other Orders: | | | |
| Other Federal Agencies | 6.3 | 0.5 | 39.5 |
| Foreign Military Sales | 199.2 | 3.6 | 125.9 |
| Nonappropriated | 0.9 | 0.6 | 2.2 |
| Non-Federal Agencies | 169.6 | 108.5 | 145.0 |
| Subtotal, Other Orders: | 375.9 | 113.2 | 312.6 |
| **Total New Orders:** | 5,287.6 | 4,215.5 | 4,415.7 |
| **2. Net Carryin Orders** | 3,719.4 | 4,097.9 | 3,850.0 |
| **3. Total Gross Orders** | 9,007.0 | 8,313.4 | 8,265.8 |
| **4. Revenue** | 4,645.2 | 4,195.1 | 4,491.7 |
| **5. Carryover** | 4,361.8 | 4,118.3 | 3,774.1 |
| **6. Months of Carryover** | 11.3 | 11.8 | 10.1 |

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Industrial Operations**

**Carryover Reconciliation**
**($ in Millions)**

| A. Carryover Calculation Categories | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| 1. Gross Carry-In | 4,025.0 | 4,361.8 | 4,118.2 |
| Adjustments to Prior Year Orders | (305.6) | (264.0) | (268.3) |
| Net Carry-In | 3,719.359 | 4,097.8 | 3,849.9 |
| 2. New Orders | 5,287.6 | 4,215.5 | 4,415.7 |
| 3. Total Gross Orders (Lines 1 + 2) | 9,007.0 | 8,313.3 | 8,265.7 |
| 4. Revenue (Gross Sales) | 4,645.2 | 4,195.1 | 4,491.7 |
| 5. Carryout (Line 3 - Line 4) | 4,361.8 | 4,118.2 | 3,774.0 |
| 6. Workload Completed per Month (Line 4 ÷ 12) | 387.1 | 349.6 | 374.3 |
| 7. Months of Carryover (Line 5 ÷ Line 6) | 11.3 | 11.8 | 10.1 |
| **B. Carryover Value by Service and Appropriation** *(Without Prior Year Adjustments for FY 2021 and FY 2022)* | **FY 2020** | **FY 2021** | **FY 2022** |
| 1. Operation and Maintenance | 1,303.2 | 1,418.0 | 1,088.4 |
| 2. Procurement | 1,205.7 | 1,337.4 | 1,596.2 |
| 3. Research and Development | 36.1 | 41.7 | 44.4 |
| 4. AWCF (Supply Management) | 631.9 | 324.9 | 14.6 |
| 5. Other Service (O&M, Investment, WCF) | | | |
| a. Air Force | 398.5 | 473.7 | 555.0 |
| b. Navy | 90.6 | 102.6 | 132.2 |
| b. Marine Corps | 92.0 | 98.8 | 121.1 |
| d. Other DOD | 141.4 | 190.8 | 263.0 |



**EXHIBIT FUND-11A**
**CARRYOVER RECONCILIATION**

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Industrial Operations**

**Carryover Reconciliation**
**($ in Millions)**

**C. Carryover by Installation**

| | FY 2020 | | FY 2021 | | FY 2022 | |
|---|---|---|---|---|---|---|
| Depots | Months | Value ($M) | Months | Value ($M) | Months | Value ($M) |
| ANAD | 9.0 | 743.1 | 10.8 | 698.6 | 10.6 | 695.1 |
| CCAD | 11.5 | 739.6 | 11.1 | 638.7 | 8.2 | 508.9 |
| LEAD | 11.2 | 425.3 | 8.2 | 326.9 | 9.3 | 304.2 |
| RRAD | 8.8 | 379.7 | 9.4 | 355.8 | 4.9 | 227.4 |
| TYAD | 9.0 | 468.8 | 13.2 | 572.8 | 11.4 | 562.3 |

| | FY 2020 | | FY 2021 | | FY 2022 | |
|---|---|---|---|---|---|---|
| Arsenals | Months | Value ($M) | Months | Value ($M) | Months | Value ($M) |
| PBA | 14.6 | 192.4 | 23.0 | 243.0 | 12.0 | 213.6 |
| RIA | 16.8 | 218.3 | 11.7 | 153.3 | 6.3 | 88.8 |
| WVA | 39.8 | 482.6 | 32.8 | 400.0 | 19.6 | 339.6 |

| | FY 2020 | | FY 2021 | | FY 2022 | |
|---|---|---|---|---|---|---|
| Ammo Plants | Months | Value ($M) | Months | Value ($M) | Months | Value ($M) |
| BGAD | 5.3 | 53.6 | 5.5 | 55.5 | 7.9 | 86.2 |
| CAAA | 13.8 | 228.9 | 13.5 | 239.4 | 15.6 | 283.8 |
| MCAAP | 18.3 | 332.6 | 21.7 | 393.6 | 21.8 | 399.9 |
| TEAD | 4.3 | 25.4 | 4.4 | 23.4 | 8.7 | 47.0 |
| SIAD | 4.0 | 71.4 | 0.9 | 17.2 | 1.1 | 16.7 |

**D. Narrative Justification**

FY2020 carryover exceeded plan due primarily to COVID-19. Schedule impacts due to delayed receipt of customer funding and employee health and safety issues caused some activities to miss Performance to Promise commitments to customers. Other DoD Services' funding that was budgeted for the beginning of the fiscal year was delayed due to their need to use funds for COVID cash flow, they could not provide the order until they received reimbursement. Additionally, new orders were received during the fourth quarter to fill capacity gaps. The sources of funds resulting in carryover fall into several categories - Other Federal and Non-Federal Agencies and FMS $37M, DWCF $10M, Other DoD Services $43M, Army Procurement $46M, RDTE $2M and $126M in OMA.

# Army Working Capital Fund
# Fiscal Year (FY) 2022 Budget Estimates
# Industrial Operations

## Changes in the Cost of Operations
## ($ in Millions)

| | | Costs |
|---|---|---|
| **FY 2020 Actual** | | **4,970.1** |
| **FY 2021 Estimate in President's Budget** | | **4,997.0** |
| **Pricing Adjustments** | | **0.6** |
| FY 2019 Pay Raise | (9.6) | |
| -Civilian Personnel | (9.6) | |
| -Military Personnel | 0.0 | |
| Materials and Supplies | 16.5 | |
| Other | (6.4) | |
| **Productivity Initiatives and Other Efficiencies** | | **(0.0)** |
| Lean Program | 16.2 | |
| Value Engineering Program | 6.9 | |
| Reinvestment of Lean savings (-) | (23.1) | |
| **Program Changes** | | **(265.5)** |
| Labor | 23.8 | |
| Travel | (0.5) | |
| Material | (333.5) | |
| Equipment | 24.9 | |
| Transportation | 0.9 | |
| Depreciation | (5.5) | |
| Advisory and Assistance Services | (6.3) | |
| Other Purchased Services | 28.0 | |
| Other | 2.6 | |
| **FY 2021 Current Estimate** | | **4,732.1** |
| **Pricing Adjustments** | | **114.6** |
| FY 2020 Pay Raise | 46.2 | |
| -Civilian Personnel | 46.1 | |
| -Military Personnel | 0.1 | |
| Materials and Supplies | 47.8 | |
| Other | 20.6 | |
| **Productivity Initiatives and Other Efficiencies** | | |
| Lean Program | 14.3 | |
| Value Engineering Program | 4.6 | |
| Reinvestment of Lean savings (-) | (18.9) | |
| **Program Changes** | | **(143.5)** |
| Labor | (12.9) | |
| Travel | (1.1) | |
| Material | 103.4 | |
| Equipment | (20.5) | |
| Transportation | (1.7) | |
| Depreciation | (8.9) | |
| Advisory and Assistance Services | (5.3) | |
| Other Purchased Services | (165.4) | |
| Other | (31.2) | |
| **FY 2022 Budget Estimate** | | **4,703.2** |

# Army Working Capital Fund
# Fiscal Year (FY) 2022 Budget Estimates
# Industrial Operations

## Material Inventory Data
## ($ in Millions)

**FY 2020**

| | Total | Mobilization | Operating |
|---|---|---|---|
| Material Inventory BOP | 898.8 | | 898.8 |
| Purchases | | | |
| A. Purchases to Support Customer Orders (+) | 1,457.6 | | 1,457.6 |
| B. Purchase of long lead items in advance of customer orders (+) | | | |
| C. Total Purchases | 1,457.6 | | 1,457.6 |
| Material Inventory Adjustments | | | |
| A. Material Used in Maintenance (and billed/charged to customer orders) (-) | 1,140.6 | | 1,140.6 |
| B. Disposals, theft, losses due to damages (-) | 1.1 | | 1.1 |
| C. Other reductions (list) (-) | 244.9 | | 244.9 |
| D. Total inventory adjustments | 1,386.7 | | 1,386.7 |
| Material Inventory EOP | 969.7 | | 969.7 |

**FY 2021**

| | Total | Mobilization | Operating |
|---|---|---|---|
| Material Inventory BOP | 969.7 | | 969.7 |
| Purchases | | | |
| A. Purchases to Support Customer Orders (+) | 1,557.7 | | 1,557.7 |
| B. Purchase of long lead items in advance of customer orders (+) | | | |
| C. Total Purchases | 1,557.7 | | 1,557.7 |
| Material Inventory Adjustments | | | |
| A. Material Used in Maintenance (and billed/charged to customer orders) (-) | 1,056.5 | | 1,056.5 |
| B. Disposals, theft, losses due to damages (-) | 5.7 | | 5.7 |
| C. Other reductions (list) (-) | 453.1 | | 453.1 |
| D. Total inventory adjustments | 1,515.3 | | 1,515.3 |
| Material Inventory EOP | 1,012.0 | | 1,012.0 |

**FY 2022**

| | Total | Mobilization | Operating |
|---|---|---|---|
| Material Inventory BOP | 1,012.0 | | 1,012.0 |
| Purchases | | | |
| A. Purchases to Support Customer Orders (+) | 1,504.9 | | 1,504.9 |
| B. Purchase of long lead items in advance of customer orders (+) | | | |
| C. Total Purchases | 1,504.9 | | 1,504.9 |
| Material Inventory Adjustments | | | |
| A. Material Used in Maintenance (and billed/charged to customer orders) (-) | 1,071.6 | | 1,071.6 |
| B. Disposals, theft, losses due to damages (-) | 1.6 | | 1.6 |
| C. Other reductions (list) (-) | 438.2 | | 438.2 |
| D. Total inventory adjustments | 1,511.4 | | 1,511.4 |
| Material Inventory EOP | 1,005.5 | | 1,005.5 |

# Army Working Capital Fund
# Fiscal Year (FY) 2022 Budget Estimates
# Industrial Operations

## Depot and Arsenal Six Percent Capital Investment Plan
## ($ in Millions)

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Anniston Army Depot | | | |
| Average Revenue for Investment | 784.6 | 867.1 | 875.3 |
| | | | |
| WCF Capital Investment Program | | | |
| Facilities/Work Environment | 4.9 | 0.0 | 0.0 |
| Equipment Modernization | 14.4 | 4.5 | 2.4 |
| Processes | 0.9 | 1.1 | 1.0 |
| Capital Investment Program | 20.1 | 5.6 | 3.3 |
| | | | |
| Operating Funds Investments | | | |
| Facilities/Work Environment | 4.5 | 0.8 | 6.8 |
| Equipment Modernization | 6.8 | 12.8 | 9.2 |
| Processes | 1.9 | 2.3 | 2.4 |
| Total Operating Funds | 13.2 | 15.9 | 18.4 |
| | | | |
| Appropriated Funding | | | |
| MILCON | 0.0 | 0.0 | 0.0 |
| Procurement | 6.0 | 0.0 | 0.0 |
| Operations & Maintenance | 7.2 | 1.3 | 0.0 |
| Total Appropriated Funding | 13.2 | 1.3 | 0.0 |
| | | | |
| Actual/ Budgeted Investment | 46.6 | 22.7 | 21.7 |
| Required Investment | 47.1 | 52.0 | 52.5 |
| Investment Over / (Under) Required Amount | (0.5) | (29.3) | (30.8) |
| | | | |
| Corpus Christi Army Depot | | | |
| Average Revenue for Investment | 805.8 | 790.3 | 756.6 |
| | | | |
| WCF Capital Investment Program | | | |
| Facilities/Work Environment | 1.9 | 0.0 | 0.0 |
| Equipment Modernization | 3.7 | 4.7 | 0.7 |
| Processes | 0.9 | 3.2 | 1.0 |
| Capital Investment Program | 6.6 | 7.9 | 1.7 |
| | | | |
| Operating Funds Investments | | | |
| Facilities/Work Environment | 1.9 | 12.0 | 8.5 |
| Equipment Modernization | 6.8 | 12.3 | 9.1 |
| Processes | 0.0 | 0.0 | 0.0 |
| Total Operating Funds | 8.6 | 24.3 | 17.5 |
| | | | |
| Appropriated Funding | | | |
| MILCON | 86.0 | 0.0 | 0.0 |
| Procurement | 0.0 | 0.0 | 0.0 |
| Operations & Maintenance | 2.8 | 15.0 | 13.2 |
| Total Appropriated Funding | 88.8 | 15.0 | 13.2 |
| | | | |
| Actual/ Budgeted Investment | 104.0 | 47.2 | 32.5 |
| Required Investment | 48.3 | 47.4 | 45.4 |
| Investment Over / (Under) Required Amount | 55.7 | (0.2) | (12.9) |

# Army Working Capital Fund
# Fiscal Year (FY) 2022 Budget Estimates
# Industrial Operations

## Depot and Arsenal Six Percent Capital Investment Plan
## ($ in Millions)

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Letterkenny Army Depot | | | |
| Average Revenue for Investment | 502.1 | 485.3 | 470.2 |
| | | | |
| WCF Capital Investment Program | | | |
| Facilities/Work Environment | 0.0 | 0.0 | 0.0 |
| Equipment Modernization | 1.4 | 10.6 | 2.3 |
| Processes | 0.5 | 0.6 | 0.5 |
| Capital Investment Program | 1.9 | 11.1 | 2.8 |
| | | | |
| Operating Funds Investments | | | |
| Facilities/Work Environment | 5.1 | 5.0 | 6.1 |
| Equipment Modernization | 7.6 | 4.0 | 2.7 |
| Processes | 0.0 | 0.0 | 0.0 |
| Total Operating Funds | 12.8 | 9.0 | 8.8 |
| | | | |
| Appropriated Funding | | | |
| MILCON | 0.0 | 0.0 | 20.4 |
| Procurement | 0.0 | 0.0 | 0.0 |
| Operations & Maintenance | 8.0 | 6.0 | 10.4 |
| Total Appropriated Funding | 8.0 | 6.0 | 30.8 |
| | | | |
| Actual/ Budgeted Investment | 22.6 | 26.1 | 42.4 |
| Required Investment | 30.1 | 29.1 | 28.2 |
| Investment Over / (Under) Required Amount | (7.5) | (3.0) | 14.2 |
| | | | |
| Red River Army Depot | | | |
| Average Revenue for Investment | 581.2 | 514.7 | 506.0 |
| | | | |
| WCF Capital Investment Program | | | |
| Facilities/Work Environment | 0.0 | 0.0 | 0.0 |
| Equipment Modernization | 0.0 | 0.0 | 0.0 |
| Processes | 0.4 | 0.4 | 0.4 |
| Capital Investment Program | 0.4 | 0.4 | 0.4 |
| | | | |
| Operating Funds Investments | | | |
| Facilities/Work Environment | 11.4 | 5.0 | 5.9 |
| Equipment Modernization | 5.8 | 10.7 | 7.9 |
| Processes | 0.0 | 0.0 | 0.0 |
| Total Operating Funds | 17.2 | 15.7 | 13.8 |
| | | | |
| Appropriated Funding | | | |
| MILCON | 0.0 | 0.0 | 0.0 |
| Procurement | 0.0 | 0.0 | 0.0 |
| Operations & Maintenance | 37.5 | 0.0 | 0.0 |
| Total Appropriated Funding | 37.5 | 0.0 | 0.0 |
| | | | |
| Actual/ Budgeted Investment | 55.1 | 16.1 | 14.2 |
| Required Investment | 34.9 | 30.9 | 30.4 |
| Investment Over / (Under) Required Amount | 20.2 | (14.8) | (16.2) |

# Army Working Capital Fund
# Fiscal Year (FY) 2022 Budget Estimates
# Industrial Operations

## Depot and Arsenal Six Percent Capital Investment Plan
## ($ in Millions)

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Tobyhanna Army Depot | | | |
| Average Revenue for Investment | 587.3 | 596.6 | 584.9 |
| | | | |
| WCF Capital Investment Program | | | |
| Facilities/Work Environment | 1.3 | 0.0 | 0.0 |
| Equipment Modernization | 5.1 | 12.5 | 10.0 |
| Processes | 1.0 | 0.9 | 0.8 |
| Capital Investment Program | 7.4 | 13.4 | 10.8 |
| | | | |
| Operating Funds Investments | | | |
| Facilities/Work Environment | 5.4 | 12.4 | 12.8 |
| Equipment Modernization | 4.9 | 9.9 | 8.8 |
| Processes | 3.0 | 2.8 | 2.9 |
| Total Operating Funds | 13.3 | 25.1 | 24.5 |
| | | | |
| Appropriated Funding | | | |
| MILCON | 0.0 | 0.0 | 0.0 |
| Procurement | 0.0 | 0.0 | 0.0 |
| Operations & Maintenance | 21.0 | 1.0 | 4.2 |
| Total Appropriated Funding | 21.0 | 1.0 | 4.2 |
| | | | |
| Actual/ Budgeted Investment | 41.6 | 39.5 | 39.5 |
| Required Investment | 35.2 | 35.8 | 35.1 |
| Investment Over / (Under) Required Amount | 6.4 | 3.7 | 4.4 |
| | | | |
| Pine Bluff Arsenal | | | |
| Average Revenue for Investment | 127.6 | 128.0 | 146.8 |
| | | | |
| WCF Capital Investment Program | | | |
| Facilities/Work Environment | 0.0 | 0.0 | 0.0 |
| Equipment Modernization | 1.4 | 0.0 | 0.0 |
| Processes | 0.2 | 0.3 | 0.3 |
| Capital Investment Program | 1.6 | 0.3 | 0.3 |
| | | | |
| Operating Funds Investments | | | |
| Facilities/Work Environment | 20.4 | 23.2 | 10.4 |
| Equipment Modernization | 0.0 | 0.0 | 0.0 |
| Processes | 0.0 | 0.0 | 0.0 |
| Total Operating Funds | 20.4 | 23.2 | 10.4 |
| | | | |
| Appropriated Funding | | | |
| MILCON | 0.0 | 0.0 | 0.0 |
| Procurement | 0.0 | 0.0 | 0.0 |
| Operations & Maintenance | 2.0 | 0.0 | 0.0 |
| Total Appropriated Funding | 2.0 | 0.0 | 0.0 |
| | | | |
| Actual/ Budgeted Investment | 24.0 | 23.5 | 10.6 |
| Required Investment | 7.7 | 7.7 | 8.8 |
| Investment Over / (Under) Required Amount | 16.4 | 15.8 | 1.8 |



**EXHIBIT FUND-6**
**DEPOT AND ARSENAL**
**SIX PERCENT CAPITAL INVESTMENT PLAN**

# Army Working Capital Fund
# Fiscal Year (FY) 2022 Budget Estimates
# Industrial Operations

## Depot and Arsenal Six Percent Capital Investment Plan
## ($ in Millions)

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Rock Island Arsenal | | | |
| Average Revenue for Investment | 168.2 | 160.7 | 165.1 |
| | | | |
| WCF Capital Investment Program | | | |
| Facilities/Work Environment | 0.0 | 0.0 | 0.0 |
| Equipment Modernization | 3.9 | 4.2 | 7.1 |
| Processes | 0.3 | 0.3 | 0.3 |
| Capital Investment Program | 4.2 | 4.5 | 7.4 |
| | | | |
| Operating Funds Investments | | | |
| Facilities/Work Environment | 13.4 | 9.3 | 11.6 |
| Equipment Modernization | 0.4 | 2.5 | 1.4 |
| Processes | 0.0 | 0.0 | 0.0 |
| Total Operating Funds | 13.9 | 11.8 | 13.1 |
| | | | |
| Appropriated Funding | | | |
| MILCON | 0.0 | 0.0 | 0.0 |
| Procurement | 0.0 | 0.0 | 0.0 |
| Operations & Maintenance | 0.0 | 0.0 | 0.0 |
| Total Appropriated Funding | 0.0 | 0.0 | 0.0 |
| | | | |
| Actual/ Budgeted Investment | 18.1 | 16.3 | 20.5 |
| Required Investment | 10.1 | 9.6 | 9.9 |
| Investment Over / (Under) Required Amount | 8.0 | 6.7 | 10.6 |
| | | | |
| Watervliet Arsenal | | | |
| Average Revenue for Investment | 84.8 | 108.9 | 127.9 |
| | | | |
| WCF Capital Investment Program | | | |
| Facilities/Work Environment | 0.6 | 1.5 | 1.6 |
| Equipment Modernization | 0.0 | 0.0 | 0.0 |
| Processes | 0.2 | 0.2 | 0.2 |
| Capital Investment Program | 0.8 | 1.7 | 1.8 |
| | | | |
| Operating Funds Investments | | | |
| Facilities/Work Environment | 20.3 | 20.0 | 13.5 |
| Equipment Modernization | 0.0 | 0.0 | 0.0 |
| Processes | 0.0 | 0.0 | 0.0 |
| Total Operating Funds | 20.3 | 20.0 | 13.5 |
| | | | |
| Appropriated Funding | | | |
| MILCON | 0.0 | 0.0 | 20.0 |
| Procurement | 0.0 | 0.0 | 0.0 |
| Operations & Maintenance | 0.3 | 21.5 | 1.3 |
| Total Appropriated Funding | 0.3 | 21.5 | 21.3 |
| | | | |
| Actual/ Budgeted Investment | 21.4 | 43.2 | 36.5 |
| Required Investment | 5.1 | 6.5 | 7.7 |
| Investment Over / (Under) Required Amount | 16.4 | 36.6 | 28.8 |

# Army Working Capital Fund
# Fiscal Year (FY) 2022 Budget Estimates
# Industrial Operations

## Depot and Arsenal Six Percent Capital Investment Plan
## ($ in Millions)

| | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Tooele Army Depot | | | |
| Average Revenue for Investment | 58.9 | 60.3 | 62.0 |
| | | | |
| WCF Capital Investment Program | | | |
| Facilities/Work Environment | 0.0 | 0.0 | 0.0 |
| Equipment Modernization | 0.0 | 0.0 | 0.0 |
| Processes | 0.1 | 0.1 | 0.1 |
| Capital Investment Program | 0.1 | 0.1 | 0.1 |
| | | | |
| Operating Funds Investments | | | |
| Facilities/Work Environment | 0.7 | 0.4 | 2.9 |
| Equipment Modernization | 0.6 | 0.4 | 0.4 |
| Processes | 0.0 | 0.0 | 0.0 |
| Total Operating Funds | 1.3 | 0.8 | 3.3 |
| | | | |
| Appropriated Funding | | | |
| MILCON | 0.0 | 0.0 | 0.0 |
| Procurement | 0.0 | 0.0 | 0.0 |
| Operations & Maintenance | 0.0 | 0.0 | 4.5 |
| Total Appropriated Funding | 0.0 | 0.0 | 4.5 |
| | | | |
| Actual/ Budgeted Investment | 1.3 | 0.9 | 7.9 |
| Required Investment | 3.5 | 3.6 | 3.7 |
| Investment Over / (Under) Required Amount | (2.2) | (2.7) | 4.2 |
| | | | |
| **Total Army** | | | |
| **Average Revenue for Investment** | **3,700.5** | **3,711.9** | **3,694.9** |
| | | | |
| **WCF Capital Investment Program** | | | |
| **Facilities/Work Environment** | **8.7** | **1.5** | **1.6** |
| **Equipment Modernization** | **29.8** | **36.5** | **22.5** |
| **Processes** | **4.4** | **7.1** | **4.4** |
| **Capital Investment Program** | **42.9** | **45.1** | **28.5** |
| | | | |
| **Operating Funds Investments** | | | |
| **Facilities/Work Environment** | **83.1** | **88.1** | **78.4** |
| **Equipment Modernization** | **32.9** | **52.5** | **39.5** |
| **Processes** | **4.9** | **5.1** | **5.3** |
| **Total Operating Funds** | **121.0** | **145.8** | **123.2** |
| | | | |
| **Appropriated Funding** | | | |
| **MILCON** | **86.0** | **0.0** | **40.4** |
| **Procurement** | **6.0** | **0.0** | **0.0** |
| **Operations & Maintenance** | **78.9** | **44.7** | **33.6** |
| **Total Appropriated Funding** | **170.9** | **44.7** | **74.0** |
| | | | |
| **Actual/ Budgeted Investment** | **334.8** | **235.6** | **225.7** |
| **Required Investment** | **222.0** | **222.7** | **221.7** |
| **Investment Over / (Under) Required Amount** | **112.7** | **12.9** | **4.0** |
| **Investment Percentage** | **9.0%** | **6.3%** | **6.1%** |

# Army Working Capital Fund
# Fiscal Year (FY) 2022 Budget Estimates
# Industrial Operations

## Fuel Data

| FY 2020 | | | |
|---|---|---|---|
| | FUEL PROCUREMENT | | |
| PRODUCT | BARRELS (millions) | COST PER BARREL ($) | EXTENDED PRICE ($ millions) |
| AVGAS (CONUS) | | $141.96 | |
| AVGAS (OCONUS) | | $559.86 | |
| **Diesel Fuel:** | | | |
| Distillates- F76 | | $126.00 | |
| High Sulfur- DF1 | 0.001 | $125.16 | 0.114 |
| Generic (High Sulfur)- DF2 | 0.000 | $112.56 | 0.008 |
| Ultra Low Sulfur- DS1 | 0.002 | $128.10 | 0.294 |
| Ultra Low Sulfur- DS2 | 0.019 | $120.96 | 2.278 |
| Burner Grade- FS1 | 0.001 | $122.64 | 0.130 |
| Burner Grade- FS2 | 0.001 | $108.36 | 0.067 |
| Biodiesel- BDI | 0.001 | $121.38 | 0.076 |
| **Jet Fuel:** | | | |
| JP8 & JA1 | | $125.16 | |
| JAA | 0.011 | $124.32 | 1.356 |
| JP5 | 0.000 | $126.42 | 0.013 |
| JPTS | | $194.46 | |
| Kerosene- KS1 | | $123.06 | |
| **Motor Gasoline:** | | | |
| Regular, Unleaded- MUR | 0.007 | $122.64 | 0.863 |
| Midgrade, Unleaded- MUM | | $129.36 | |
| Premium, Unleaded- MUP | | $144.06 | |
| Gasohol- GUM | 0.000 | $129.36 | 0.000 |
| Ethanol- E85 | 0.001 | $122.64 | 0.098 |
| **Residual:** | | | |
| Burner Grade- FS4 | | $79.38 | |
| Residual (Burner Grade)- FS6 | | $63.00 | |
| FOR | | $39.90 | |
| Bunkers Marine- MGO | | $129.36 | |
| Bunkers Intermediate Grade- 180, 380 | | $94.50 | |
| Into Plane Jet Fuel- IAI, IAA, IAB, IP8 | | $141.96 | |
| Local Purchase Jet Fuel- NA1, NAA | | $153.30 | |
| Local Purchase Ground Fuel- NLS, NMU | 0.000 | $131.04 | 0.026 |
| Propane | 0.001 | $125.16 | 0.143 |
| TOTAL | 0.045 | | 5.465 |

# Army Working Capital Fund
# Fiscal Year (FY) 2022 Budget Estimates
# Industrial Operations

## Fuel Data

| FY 2021 | | | |
|---|---|---|---|
| | FUEL PROCUREMENT | | |
| PRODUCT | BARRELS (millions) | COST PER BARREL ($) | EXTENDED PRICE ($ millions) |
| AVGAS (CONUS) | | $133.98 | |
| AVGAS (OCONUS) | | $527.94 | |
| **Diesel Fuel:** | | | |
| Distillates- F76 | | $118.86 | |
| High Sulfur- DF1 | 0.001 | $118.02 | 0.115 |
| Generic (High Sulfur)- DF2 | 0.000 | $106.26 | 0.013 |
| Ultra Low Sulfur- DS1 | 0.002 | $120.96 | 0.284 |
| Ultra Low Sulfur- DS2 | 0.019 | $120.12 | 2.296 |
| Burner Grade- FS1 | 0.001 | $115.50 | 0.157 |
| Burner Grade- FS2 | 0.003 | $102.06 | 0.265 |
| Biodiesel- BDI | 0.003 | $114.24 | 0.336 |
| **Jet Fuel:** | | | |
| JP8 & JA1 | | $118.02 | |
| JAA | 0.020 | $117.18 | 2.380 |
| JP5 | 0.000 | $119.28 | 0.024 |
| JPTS | | $183.54 | |
| Kerosene- KS1 | | $115.92 | |
| **Motor Gasoline:** | | | |
| Regular, Unleaded- MUR | 0.008 | $115.50 | 0.968 |
| Midgrade, Unleaded- MUM | | $121.80 | |
| Premium, Unleaded- MUP | | $136.08 | |
| Gasohol- GUM | | $121.80 | |
| Ethanol- E85 | 0.001 | $115.50 | 0.077 |
| **Residual:** | | | |
| Burner Grade- FS4 | 0.000 | $74.76 | 0.030 |
| Residual (Burner Grade)- FS6 | | $59.22 | |
| FOR | | $39.90 | |
| Bunkers Marine- MGO | | $122.22 | |
| Bunkers Intermediate Grade- 180, 380 | | $89.04 | |
| Into Plane Jet Fuel- IAI, IAA, IAB, IP8 | | $133.98 | |
| Local Purchase Jet Fuel- NA1, NAA | 0.004 | $144.90 | 0.555 |
| Local Purchase Ground Fuel- NLS, NMU | | $123.48 | |
| Propane | 0.002 | $124.32 | 0.200 |
| TOTAL | 0.065 | | 7.699 |

# Army Working Capital Fund
# Fiscal Year (FY) 2022 Budget Estimates
# Industrial Operations

## Fuel Data

| FY 2022 | | | |
|---|---|---|---|
| | FUEL PROCUREMENT | | |
| PRODUCT | BARRELS (millions) | COST PER BARREL ($) | EXTENDED PRICE ($ millions) |
| AVGAS (CONUS) | | $124.32 | |
| AVGAS (OCONUS) | | $490.14 | |
| **Diesel Fuel:** | | | |
| Distillates- F76 | | $110.46 | |
| High Sulfur- DF1 | 0.0015 | $109.62 | 0.159 |
| Generic (High Sulfur)- DF2 | 0.0001 | $98.70 | 0.012 |
| Ultra Low Sulfur- DS1 | 0.0023 | $112.56 | 0.264 |
| Ultra Low Sulfur- DS2 | 0.0177 | $105.84 | 1.871 |
| Burner Grade- FS1 | 0.0014 | $107.10 | 0.148 |
| Burner Grade- FS2 | 0.0047 | $94.92 | 0.443 |
| Biodiesel- BDI | 0.0030 | $105.84 | 0.322 |
| **Jet Fuel:** | | | |
| JP8 & JA1 | | $109.62 | |
| JAA | 0.0216 | $108.78 | 2.351 |
| JP5 | 0.0002 | $110.88 | 0.022 |
| JPTS | | $170.52 | |
| Kerosene- KS1 | | $107.94 | |
| **Motor Gasoline:** | | | |
| Regular, Unleaded- MUR | 0.0078 | $107.10 | 0.837 |
| Midgrade, Unleaded- MUM | | $113.40 | |
| Premium, Unleaded- MUP | | $126.42 | |
| Gasohol- GUM | | $113.40 | |
| Ethanol- E85 | 0.0007 | $107.10 | 0.074 |
| **Residual:** | | | |
| Burner Grade- FS4 | 0.0004 | $69.72 | 0.028 |
| Residual (Burner Grade)- FS6 | | $55.44 | |
| FOR | | $39.90 | |
| Bunkers Marine- MGO | | $113.82 | |
| Bunkers Intermediate Grade- 180, 380 | | $82.74 | |
| Into Plane Jet Fuel- IAI, IAA, IAB, IP8 | | $124.32 | |
| Local Purchase Jet Fuel- NA1, NAA | 0.0042 | $133.98 | 0.561 |
| Local Purchase Ground Fuel- NLS, NMU | | $114.66 | |
| Propane | 0.0016 | $124.32 | 0.198 |
| TOTAL | 0.0672 | | 7.291 |

# Capital Budget Introduction

The primary goal of the Capital Investment Program (CIP) within the AWCF is to establish a capability for reinvestment in the infrastructure of business areas to improve product and service quality and timeliness, reduce costs, and foster state-of-the-art business operations. The CIP provides the framework for planning, coordinating, and controlling AWCF resources and expenditures to obtain capital assets. Included in the capital budget are the following types of assets: automated data processing equipment (ADPE); non-ADPE equipment; automated data processing software, whether internally or externally developed; and minor construction. The capital budget justifies the purchase of assets with a unit cost that is greater than or equal to $250,000 and have a useful life of two or more years.

Headquarters, Army Materiel Command conducts a thorough vetting process to ensure capital projects deliver a positive return on investment and comply with strategic plans for each industrial facility. Capital projects within the Industrial Operations enterprise focus primarily on replacing and upgrading equipment, while the Supply Management enterprise focuses solely on software development in support of the Logistics Modernization Program.

Capital budget obligation authority is displayed on the following exhibits: Fund 9a, *Capital Investment Summary*; Fund 9b, *Capital Purchase Justification*; and Fund 9c, *Capital Budget Execution*.

The following table shows the Supply Management capital budget and associated cash outlays.

Table CIP 1- Supply Management Capital Budget

| ($ Millions) | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Software | 8.7 | 17.2 | 18.0 |
| *Capital Cash Outlays* | *20.8* | *23.2* | *18.2* |

The following table shows categories and respective values of the Industrial Operations capital budget and the projected capital cash outlays.

Table CIP 2 - Industrial Operations Capital Budget

| ($ Millions) | FY 2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Equipment | 28.5 | 38.3 | 28.2 |
| ADPE & Telecommunications | 6.7 | 9.3 | 5.6 |
| Software | 5.3 | 8.1 | 5.3 |
| Minor Construction | 13.4 | 20.1 | 16.0 |
| Total | 53.8 | 75.7 | 55.0 |
| *Capital Cash Outlays* | *67.1* | *70.7* | *70.7* |

*Note: Numbers may not add due to rounding*

# Army Working Capital Fund
## Fiscal Year (FY) 2022 Budget Estimates
## Supply Management

### Capital Investment Summary
### ($ in Millions)

| Line No. | Item Description | FY 2020 | | FY 2021 | | FY 2022 | |
|---|---|---|---|---|---|---|---|
| | | QTY | Total Cost | QTY | Total Cost | QTY | Total Cost |
| | **Software Development - Externally Developed** | **1** | **8.682** | **2** | **17.199** | **2** | **18.040** |
| *00-02* | Logistics Modernization Program | 1 | 8.682 | 1 | 16.699 | 1 | 17.540 |
| 16-01 | Enterprise Price & Credit Tool | 0 | 0.000 | 1 | 0.500 | 1 | 0.500 |
| | **TOTAL OBLIGATIONS*** | | **8.682** | | **17.199** | | **18.040** |
| | *Total Capital Outlays* | | 20.815 | | 23.219 | | 18.227 |
| | *Total Depreciation Expense* | | 40.536 | | 32.287 | | 30.123 |

*Note: FY 2020 total of $8.682 million does not include $11.033 million CIP Carryover Obligations.

**EXHIBIT FUND 9a**
**CAPITAL INVESTMENT SUMMARY**

# Army Working Capital Fund
## Fiscal Year (FY) 2022 Budget Estimates
## Supply Management

### Capital Investment Summar
### ($ in Millions)

| Line No. 00-02<br>Supply Management | | Software Development - Externally Developed<br>Logistics Modernization Program (LMP) | | |
|---|---|---|---|---|
| Item Description | | FY 2020 | FY 2021 | FY 2022 |
| *Logistics Modernization Program* | | 8.682 | 16.699 | 17.540 |
| | **Total** | **8.682** | **16.699** | **17.540** |

*Narrative Justification*

As with any system, LMP continues to require modernization to remain relevant and to maintain superior supply chain functionality, supporting National Level Logistics. LMP Increment 1 was fully fielded in October 2010 and enhanced by LMP Increment 2's full deployment declaration in September 2016. These increments combine as the current LMP sustainment capability which is currently used by approximately 21,000 users at more than 50 Army locations worldwide. LMP is not yet fully integrated into the overarching Army transformation efforts or extended into shop floor control activities. However, LMP is an enabler for the Army to achieve its commitment to having fully auditable AWCF financial statements. LMP seamlessly enhances the Enterprise Resource Planning (ERP) solution to achieve and meet compliance requirements and trading partner requirements.

In FY 2021-2022, LMP will continue to design, develop, test, and deploy improvements to the existing inventory management processes for Army Working Capital Fund inventory held by Army contractors to improve the automated links with the contractor systems to improve the overall inventory accuracy and reduce manual efforts and address weaknesses identified by auditors to include the DoD Inspector General (A-2015-FMR-0217.000, D2014-D000FI-0138.000). In addition, LMP will migrate infrastructure and hosting responsibilities to a non-DISA Cloud environment in response to a DoD directive. Under the Office of the Secretary of Defense for Acquisition, Technology, and Logistics Acquisition Decision Memorandum effective 28 Dec 2011, LMP Increment 1 is in sustainment. Sustainment tasks, worked in cooperation with AMC and the Army Shared Services Center include technical upgrades, minor enhancements, compliance, auditability, and transition of services to new service providers. AWCF rules are followed to identify the appropriate color of money for these tasks.

Failure to fund LMP would prohibit AMC functional requirements from improving operations and put continuing financial compliance at risk. In addition, LMP would not be in compliance with Secretary of Defense directives and would not be able to meet all the Federal, DOD, and Army milestones as developed in the Army Standard Line of Accounting implementation plan.

# Army Working Capital Fund
## Fiscal Year (FY) 2022 Budget Estimates
## Supply Management

### Capital Investment Summary
### ($ in Millions)

| Line No. 16-01<br>Supply Management | | Software Development - Externally Developed<br>Enterprise Price & Credit (EPiC) Tool | | |
|---|---|---|---|---|
| Item Description | | FY 2020 | FY 2021 | FY 2022 |
| *Enterprise Price & Credit Tool* | | 0.000 | 0.500 | 0.500 |
| | **Total** | **0.000** | **0.500** | **0.500** |

*Narrative Justification*

The Enterprise Price and Credit (EPiC) Tool is consolidating and establishing an AMC owned process currently performed by contractors. AMC does not own the pricing database for 110,000 National Item Identification Numbers (NIINs) which require yearly price review and potential monthly updates. The Life Cycle Management Centers (LCMCs) now have a single source for reviewing and identifying price changes related to NIIN demand requirements for repair and replenishment.

The EPiC Tool has been developed to provide re-engineered business process integrated into the Army ERP systems to support the price and credit process at AMC LCMCs, HQ AMC, and HQ Department of the Army. The EPiC Tool reduces support contract requirements, error rates, and the associated man-hours for corrective actions, establishing a single repository for historical price data for Army-managed items. This requirement is in support of the EPiC Tool 2.0 enhancements. There are a total of 17 enhancements which will make the EPiC Tool more user friendly and the functionality more efficient.

The categories for the enhancements are:
1. Ability to mass approve/disapprove
2. Automatically forward all NIINs with PBL codes to Price and Credit Admin
3. Prime justification is required to be populated on all related NIINs upon submission
4. Workflow improvement
5. Improve the ability to transition between tasker more efficiently

Impact:
Failure to fund the EPiC Tool 2.0 would require a workaround for customers and a non-integrated and error-prone process in the Army for determining the price and credit table.

# Army Working Capital Fund
## Fiscal Year (FY) 2022 Budget Estimates
### Supply Management

**Capital Investment Summary**
**($ in Millions)**

| FY | Major Category | Initial Request | Current Projected Cost | Approved Change | Explanation |
|---|---|---|---|---|---|
| **2020** | **Software Development** | | | | |
| | *Logistics Modernization Program* | 21.696 | 8.682 | (13.014) | Auditability requirements have not been realized. FY 2021 carryover $12.609 million. |
| | **Total FY 2020** | **21.696** | **8.682** | **(13.014)** | |
| **2021** | **Software Development** | | | | |
| | *Logistics Modernization Program* | 20.318 | 16.699 | (3.619) | Auditability requirements have not been realized. |
| | *Enterprise Price & Credit Tool* | 0.000 | 0.500 | 0.500 | New project that was not known about for the FY 2021 President's Budget. |
| | **Total FY 2021** | **20.318** | **17.199** | **(3.119)** | |
| **2022** | **Software Development** | | | | |
| | *Logistics Modernization Program* | 17.540 | 17.540 | 0.000 | |
| | *Enterprise Price & Credit Tool* | 0.500 | 0.500 | 0.000 | |
| | **Total FY 2022** | **18.040** | **18.040** | **0.000** | |

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Industrial Operations**

**Capital Investment Summary**
**($ in Millions)**

| Line No. | Item Description | FY 2020 | | FY 2021 | | FY 2022 | |
|---|---|---|---|---|---|---|---|
| | | QTY | Total Cost | QTY | Total Cost | QTY | Total Cost |
| 05-13 | **NON- ADPE EQUIPMENT CAPABILITIES** | **25** | **28.454** | **15** | **38.253** | **17** | **28.158** |
| | *- Replacement* | 10 | 11.726 | 8 | 29.789 | 16 | 27.336 |
| | *- Productivity* | 12 | 10.087 | 6 | 6.182 | 1 | 0.822 |
| | *- New Mission* | 3 | 6.641 | 0 | 0.000 | 0 | 0.000 |
| | *- Environmental* | 0 | 0.000 | 1 | 2.282 | 0 | 0.000 |
| | **ADPE & Telecommunications Equipment** | **4** | **6.677** | **3** | **9.276** | **1** | **5.589** |
| 20-03 | - Public Address/Visual Information System (PAVIS) | 1 | 3.486 | 0 | 0.000 | 0 | 0.000 |
| 19-05 | *- Voice over Internet Protocol (VOIP)* | 1 | 1.394 | 0 | 0.000 | 1 | 5.589 |
| 20-01 | *- Storage Array* | 1 | 1.256 | 0 | 0.000 | 0 | 0.000 |
| 20-02 | *- Virtual Desktop Infrastructure Upgrade* | 1 | 0.541 | 0 | 0.000 | 0 | 0.000 |
| 21-01 | *- Virtual Desktop Infrastructure (VDI) Implementation* | 0 | 0.000 | 1 | 3.892 | 0 | 0.000 |
| 21-02 | *- Land Mobile Radio (LMR) Lifecycle Replacement* | 0 | 0.000 | 2 | 5.384 | 0 | 0.000 |
| | **Software Development - Externally Developed** | **2** | **5.265** | **2** | **8.094** | **1** | **5.328** |
| 00-02 | *- Logistics Modernization Program* | 1 | 5.006 | 1 | 6.005 | 1 | 5.328 |
| 20-03 | *- Common IFF Test Rack Calibration Software* | 1 | 0.259 | 0 | 0.000 | 0 | 0.000 |
| 21-03 | *- Upgrade of Server Room Control System (Software)* | 0 | 0.000 | 1 | 2.089 | 0 | 0.000 |
| 05-26 | **MINOR CONSTRUCTION CAPABILITIES** | **12** | **13.379** | **9** | **20.124** | **6** | **15.962** |
| | *- Replacement* | 1 | 0.595 | 1 | 1.505 | 1 | 1.589 |
| | *- New Construction* | 0 | 0.000 | 1 | 1.848 | 0 | 0.000 |
| | *- Productivity* | 11 | 12.784 | 7 | 16.771 | 5 | 14.373 |
| | **Total Obligations*** | **43** | **53.775** | **29** | **75.747** | **25** | **55.037** |
| | *Total Capital Outlays* | | 67.102 | | 70.657 | | 70.657 |
| | *Total Depreciation Expense* | | 99.270 | | 97.123 | | 83.280 |

*Note: FY 2020 total of $53.775 million does not include the following: FY 2010 Non-ADPE Equipment reprogramming ($0.100 million); FY 2012 Non-ADPE Equipment reprogramming ($0.459 million); FY 2017 Non-ADPE Equipment ($0.083 million); FY 2018 Non-ADPE Equipment ($0.585 million); FY 2019 Non-ADPE Equipment ($1.677 million), Software LMP ($4.500 million) and Minor Construction ($0.128 million).

**Capital Purchase Justification**
**($ in Millions)**

| **Line No. 05-13** | | | **Non - ADPE Equipment Capabilities** | |
|---|---|---|---|---|
| **Industrial Operations** | | | **Various Capital Equipment** | |
| Item Description | | **FY 2020** | **FY 2021** | **FY 2022** |
| *Various Capital Equipment - Replacement* | | 11.726 | 29.789 | 27.336 |
| *Various Capital Equipment - Productivity* | | 10.087 | 6.182 | 0.822 |
| *Various Capital Equipment - New Mission* | | 6.641 | 0.000 | 0.000 |
| *Various Capital Equipment - Environmental* | | 0.000 | 2.282 | 0.000 |
| | **Total** | **28.454** | **38.253** | **28.158** |

***Narrative Justification***

This exhibit represents equipment purchases costing more than $250K, which will improve the installations' efficiency or effectiveness through replacement, modification, or addition of production and maintenance capability and compliance with new mission requirements. Equipment supports organic maintenance, overhaul, rebuild, reclamation, conversion, renovation, modification and repair programs.

Acquisition of this equipment will improve productivity and increase capacity; replaces unsafe, inoperable or unusable assets; and includes requirements for environmentally hazardous waste reduction or regulatory agency mandated requirements.

If not acquired, the impact would be reduced mission capability, failures to meet present and future workload requirements, increased man-hour expenditures, inabilities to meet production schedules, excessive downtime, increased maintenance costs, and decreased accuracy and dependability.

Economic Analyses have been performed on individual projects when required and are available upon request.

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Industrial Operations**

**Capital Purchase Justification**
**($ in Millions)**

| **Line No. 20-03** | | **ADPE & Telecommunications Equipment** | | |
|---|---|---|---|---|
| **Industrial Operations** | | **Public Address/Visual information System (PAVIS)** | | |
| Item Description | | **FY 2020** | **FY 2021** | **FY 2022** |
| Public Address/Visual Information System (PAVIS) | | 3.486 | 0.000 | 0.000 |
| | **Total** | **3.486** | **0.000** | **0.000** |

***Narrative Justification***

The existing Public Address/Visual Information System (PAVIS) system is installed in 70 buildings at Tobyhanna Army Depot (TYAD) using an IED 500 Announcement Control System (ACS), which delivers paging to multiple unique zones. The project includes the Public Address (PA) Component of PAVIS only. Issues with the existing PAVIS system include: its age (obsolescence), condition, reliability, and that it does not have some of the emergency alert features inherent in more modern announcement control (voice paging) systems. As a result, the public address (paging) component of the system does not comply with current codes and regulations (National Fire Protection Agency, DoD Unified Facilities Criteria, etc.), designed to serve as a component of the required facility-wide Mass Notification System (MNS). Coupled with the depot's Ad Hoc text/e-mail alert messaging system, Big Voice and fire alarm system, the IED 500 ACS is a critical component of TYAD's MNS. Since there is no plausible means to upgrade the existing ACS system to meet current MNS requirements, TYAD has to replace the system or remain non-compliant in terms of regulatory requirements and put TYAD's facilities and personnel at risk of potential catastrophe during an emergency.

Integrated with the other emergency alert systems, a new public address component will provide TYAD with the capability to provide emergency notification to all personnel working on or visiting the depot. Augmenting the existing "Big Voice" speakers with additional outside speakers in all four quadrants of the depot will ensure full coverage for personnel working outside. Additional speakers will be located within the mission and administrative areas inside depot buildings including areas where cell phone usage is not permitted. A new PA system will have the capability of reaching all employees, contractors and personnel visiting the depot.

Without a new public address component, TYAD will be unable to notify personnel of emergency situations, local road closures and severe changes in weather conditions or provide overhead paging for quick responses and mass notifications. Without an effective PA system, an emergency situation can escalate to a catastrophic change for harm, injury or even death of employees or severe damage or destruction of property.

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Industrial Operations**

**Capital Purchase Justification**
**($ in Millions)**

| **Line No. 19-05**<br>**Industrial Operations** | | **ADPE & Telecommunications Equipment**<br>**Voice Over Internet Protocol (VOIP)** | | |
|---|---|---|---|---|
| Item description | | **FY 2020** | **FY 2021** | **FY 2022** |
| *Voice Over Internet Protocol (VOIP)* | | 1.394 | 0.000 | 5.589 |
| | **Total** | **1.394** | **0.000** | **5.589** |

***Narrative Justification***

FY2020
The analog telephone switch at Letterkenny Army Depot (LEAD) is over 20 years old and has reached end of life. Repair parts are becoming increasingly difficult to acquire.

LEAD expects to save significant man-hours and money with the installation of VoIP. The savings will be realized with less anticipated upkeep and reduced long distance utilizing Session Initiation Protocol (SIP).

The preferred alternative is to replace all existing equipment with Joint Interoperability Test Command (JITC) certified replacement. The recommended JITC certified VOIP equipment (Voice Over Internet Protocol) will maintain telephone traffic to all areas and keep LEAD compliant with all DOD policies and directives.

If a VoIP solution is not purchased and implemented, LEAD will continue to utilize a telephone switch in end of life status or will have to purchase a new analog telephone switch.

FY2022
To ensure long-term telephone capability, Tobyhanna Army Depot (TYAD) must replace the Nortel SL2200 telephone switch and install a resilient voice network that ensures integrity and availability of voice capability on the installation. To meet the requirements put forth in Army Regulation 25-13 “Army Telecommunications and Unified Capabilities”, TYAD must replace the existing telephone switch with VoIP capability already available from Defense Information Systems Agency (DISA), our current internet service provider. This Private Branch Exchange (PBX) phone system is an analog telephone switch that was installed in the early 1990s. At over 25 years old, this unit is beyond its economic life of 23 years. The existing telephone system requires local dial tone service, long-haul Federal Telecommunications System (FTS) service, and extended switch maintenance, which includes voicemail support and hardware replacement parts support.

The desired outcome is to replace the existing telephone switch with a Voice over Internet Protocol (VoIP) system offered as a managed service through DISA as required by Army Regulation 25-13. A total of five (5) existing telecommunications rooms (TR) will receive new telecommunications equipment, cable terminations, and cross-connect cabling, as well as floor-mounted server cabinets. E-911 service, which ties a physical address to VoIP phone numbers, is included.

Without this capital investment, TYAD will have to continue to use the aged analog system and not be able to advance TYAD’s voice communication infrastructure to a modern Voice over Internet Protocol digital phone system as required by Army Regulation 25-13.

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Industrial Operations**

**Capital Purchase Justification**
**($ in Millions)**

| **Line No. 20-01** Industrial Operations | | | | **ADPE & Telecommunications Equipment Storage Array** |
|---|---|---|---|---|
| Item Description | | **FY 2020** | **FY 2021** | **FY 2022** |
| *Storage Array* | | 1.256 | 0.000 | 0.000 |
| | **Total** | **1.256** | **0.000** | **0.000** |

***Narrative Justification***

Corpus Christi Army depot (CCAD) has two primary storage solutions within the data center that store all of CCAD's data in support of our mission. These storage systems have reached their end of lifecycle and are no longer supported by the manufacturer. An additional storage system is located in a separate building that provides a hot site backup. This storage system has reached its end of lifecycle and will no longer be supported by the manufacturer after 2019. All data residing within the data center is automatically replicated to the hot site. Additionally, CCAD maintains a cold site backup at Joint Base San Antonio where all data at CCAD is replicated.

CCAD has a new requirement to expand video storage requirements for our Security Video Monitoring System (SVMS). Video is now stored on the same storage system as all other data. Given the technological advances in cameras and video technology, such as high definition, the storage requirement has increased dramatically. Currently, video can only be saved for approximately five days before it is overwritten. This is not adequate to meet the Security Division's requirement. If video is only saved for five days, by the time Security is notified of a possible investigation requirement, it is likely that the video no longer exists. Therefore, Security is requesting video be retained for 30 days. With the sensitive nature of the video, and its potential to be used in legal proceedings, it is necessary to ensure the integrity of potential evidence. In order to meet this requirement a separate storage system will be required.

The preferred alternative involves the purchase, installation, and configuration of three storage solutions. This solution includes the lifecycle replacement of the two storage solutions within the data center with one storage solution, the lifecycle replacement of the storage solution within the hot site, and the acquisition of a new storage solution to support SVMS.

Without funding, CCAD would be forced to continue the usage of existing storage solutions without support. This would be in conflict with Risk Management Framework security controls as well as increasing the risk of data loss if a failure is experienced within the storage solutions.

An Economic Analysis has been performed and is available upon request.

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Industrial Operations**

**Capital Purchase Justification**
**($ in Millions)**

| **Line No. 20-02**<br>**Industrial Operations** | | **ADPE & Telecommunication Equipment**<br>**Virtual Desktop Infrastructure Upgrade** | | |
|---|---|---|---|---|
| Item Description | | **FY 2020** | **FY 2021** | **FY 2022** |
| *Virtual Desktop Infrastructure Upgrade* | | 0.541 | 0.000 | 0.000 |
| | **Total** | **0.541** | **0.000** | **0.000** |

***Narrative Justification***

The Corpus Christi Army Depot (CCAD) hosts a Virtual Desktop Infrastructure (VDI) Environment that provides end users with a virtual desktop where all processing and storage takes place on servers that reside in CCAD's data center. Each virtual desktop consists of the latest Army Gold Master (AGM) running Microsoft (MS) Windows 7 with 2 Gigabytes (GB) of Random Access Memory (RAM) and required standard application software. The VDI provides failover capability, in the event of a failure, all VDI users would lose their existing virtual desktop. Logging in again would establish a new session on a different server and possibly at CCAD's hot site depending on the extent of the failure. CCAD must ensure compliance with all Information Assurance Vulnerability Alerts (IAVA) released by the United States Cyber Command (USCYBERCOM). CCAD is currently tracking 437 IAVAs that have been released in Fiscal Year 2017. The VDI allows CCAD to maintain one master image for all virtual desktops, applying a patch to the master image replicates it to all virtual desktops vice applying a patch to every physical device. This reduces man hours and increases our security posture. 7th Signal Command has implemented task order 150309-179 that requires implementation of MS Windows X64 bit architecture. U.S. Army Cyber Command and Second Army have issued operations order 2017-017 that requires implementation of Windows 10 no later than 31 Jan 2018. Computer systems with x64 version of Windows use more memory than hardware with a 32-bit version of Windows. In the current VDI environment, each virtual desktop consists of 2GB of RAM, moving to a Windows 10 X64 environment will require each virtual desktop to have 3GB of RAM to operate effectively. The current VDI will not support the increased requirement. Status quo is infeasible as CCAD would be in violation of the operation orders.

The preferred alternative involves the acquisition, installation, and configuration of additional servers to supplement the existing VDI environment. The preferred alternative will provide the memory resources to support the required X64 bit Windows 10 operating system. This alternative also increase CCAD Information Technology security posture given the efficient method of applying require security patches.

Without funding, CCAD would be forced to reduce the number of personnel utilizing the VDI by approximately 1,000 end users. This would in turn require us to purchase an equal amount of personal computers, which would increase the man hours required to maintain IAVA compliance and support the additional computers.

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Industrial Operations**

**Capital Purchase Justification**
**($ in Millions)**

| **Line No. 21-01**<br>**Industrial Operations** | | **ADPE & Telecommunication Equipment**<br>**Virtual Desktop Infrastructure (VDI) Implementation** | | |
|---|---|---|---|---|
| Item Description | | **FY 2020** | **FY 2021** | **FY 2022** |
| *Virtual Desktop Infrastructure (VDI) Implementation* | | 0.000 | 3.892 | 0.000 |
| | **Total** | **0.000** | **3.892** | **0.000** |

***Narrative Justification***

Letterkenny Army Depot (LEAD) currently life-cycles all depot workstations every three years in order to keep up with minimum system requirements for new and updated applications and operating systems. Imaging and deploying new workstations are labor intensive processes, and workstations are constantly subjected to the scanning and patching process. Information Assurance Vulnerability Management (IAVM) patching is a manual process that can be very time consuming and many times machines are non-compliant because they reject the patching. When this happens, onsite technicians must retrieve the workstation to go through manual reimaging. Physical machines quickly wear out due to being deployed in less than ideal industrial environments where they are constantly exposed to dust particulates and heat. There are constant issues with corruption of software and hardware failures that lead to down time for the customer and increased support time for service desk technicians.

LEAD expects to save significant time and money with the installation of a Virtual Desktop Infrastructure. While this project does have a high initial startup cost, savings are realized in the out years. As LEAD expands its virtual footprint, the Depot will realize savings through virtualization. As compared to traditional PC's, virtual desktops, or "Wyse Terminals", do not require reimaging and trouble tickets are significantly reduced. VDI allows for patching and scanning to be done on a, single, "root image" at one, centralized, location. Patching the "root image" with the latest security updates ensures every attached PC will also be protected. If a problem arises, only one, centralized system will need to be analyzed and repaired. Individual workstations will no longer need to be scanned and patched as new IAVMs are released. System Administrators will scan and patch the single image, then, propagate that image to the client terminals. The client terminal is completely solid state. No moving parts equates to a longer equipment life. The average life of a client terminal is about six years. A single PC is typically replaced twice within a six year period. Given the average PC costs approximately $750, the government pays approximately $1,500 per user over that six year span. Conversely, a "Wyse Terminal" costs $400 per unit. Over a period of six years, VDI saves the depot $1,100 per terminal. If the depot deploys 400 Wyse Terminals, the savings equates to $440,000 every six years.

If a VDI solution is not purchased and implemented, LEAD will continue to life cycle 667 workstations annually to replace failing PCs and to replace PCs that no longer meet minimum system requirements to support the AGM and Office 2013. LEAD will continue to waste valuable time and money imaging, scanning, patching, supporting, and repairing physical workstations thus increasing our risk of security vulnerabilities.

**Capital Purchase Justification**
**($ in Millions)**

| **Line No. 21-02** | | **ADPE & Telecommunication Equipment** | | |
|---|---|---|---|---|
| **Industrial Operations** | | **Land Mobile Radio (LMR) Lifecycle Replacement** | | |
| Item Description | | **FY 2020** | **FY 2021** | **FY 2022** |
| *Land Mobile Radio (LMR) Lifecycle Replacement* | | 0.000 | 5.384 | 0.000 |
| | **Total** | **0.000** | **5.384** | **0.000** |

***Narrative Justification***

LMR is a system that consists of subscriber units (portable, mobile and base station radios as well as dispatch consoles) and site equipment (servers, data switches, routers, antennas, master repeaters and diagnostic tools) that allows First Responders, Emergency Operations, Public Works and Industrial Operations users to communicate. With specialized bridging equipment, the system also allows contact with County authorities in case of emergency. The current LMR system is the base for Letterkenny army Depot's (LEAD) approximately 450 subscriber units across the Depot and Depot Tenants. End of life for the subscriber units was 29 June 2017 according to Harris Products End of Life document ECR-8083D (1). Under the same document, the trunked repeaters have been discontinued with End of Service and Parts Support date of 31 January 2023. All of the system servers are also End of Life and well beyond the End of Service and Parts Support, which ended 23 March 2015. Letterkenny has been working with a third-party Contractor as well as the manufacturer to maintain the system. Currently, LEAD spends over $102,000 a year in maintenance fees.

LEAD expects to save significant man-hours in upkeep of the system when replaced. The updated system will be fully accredited, as well, ensuring LEAD's successful posture for the Continuity Of Operations Plan (COOP) currently in place. The proposed LMR system will have new features that will allow better system integration with local authorities. The new LMR system will also allow LEAD to recertify the system and apply all applicable Security Technical Implementation Guides (STIG).

If LEAD is not granted permission to invest in a new LMR system, our First Responders, Emergency Operation and critical Public Works could possibly lose extremely valuable communications within the Depot, as well as with local authorities as the current systems reliable operation continues to decline with no support from the manufacturer.

McAlester Army Ammunition Plant's (MCAAP) LMR system is a secure wireless communications system that provides two-way, or trunked, voice and data transmission between installation first responders. To ensure radio compatibility, several international organizations and government agencies joined together to develop a set of standards for radio communications. This effort, named Project 25 (P25), established a common digital public safety radio to guarantee compatibility and interoperability with other compliant systems. This P25 standard allows the MCAAP LMR system to securely communicate with other federal, State, local, and tribal LMR users during times of emergency. MCAAP's current LMR system is P25 compliant, but does not meet several requirements outlined in the Army Emergency Management Program and other DOD and DA regulations. The current system does not provide adequate coverage to the entire, 45,000 acre installation and it lacks redundancy to provide backup communications if the primary system becomes disabled.

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Industrial Operations**

**Capital Purchase Justification**
**($ in Millions)**

| **Line No. 00-02**<br>**Industrial Operations** | | **Software Development - Externally Developed**<br>**Logistics Modernization Program (LMP)** | | |
|---|---|---|---|---|
| Item Description | | **FY 2020** | **FY 2021** | **FY 2022** |
| *Logistics Modernization Program* | | 5.006 | 6.005 | 5.328 |
| | **Total** | **5.006** | **6.005** | **5.328** |

***Narrative Justification***

LMP continues to require modernization enhancements to maintain superior supply chain functionality, supporting National Level Logistics. LMP Increment 1 was fully fielded in October 2010 and enhanced by LMP Increment 2's full deployment declaration in September 2016. These increments combine as the current LMP capability and is currently used by approximately 21,000 users at more than 50 Army locations worldwide, but is not yet integrated into overarching Army transformation efforts. LMP is an enabler for the Army to achieve its commitment to having fully auditable AWCF financial statements. LMP continues to enhance the Enterprise Resource Planning (ERP) solution to achieve and meet compliance requirements and trading partner requirements seamlessly.

Failure to fund LMP would prohibit AMC functional requirements from improving operations and put continuing financial compliance at risk. LMP will not be in compliance with Secretary of Defense directives. LMP may not be able to meet the all Federal, DOD, and Army milestones being developed in the Army Standard Line of Accounting implementation plan.

Total Asset Visibility - Contractor: In FY 2021-2022, LMP will design, develop, test, and begin deploying improvements to the existing inventory management processes for Army Working Capital Fund inventory held by Army contractors. Improving the automated links with the contractor systems will improve the overall inventory accuracy, reduce manual efforts and address weaknesses identified by auditors to include the DoD Inspector General (A-2015-FMR-0217.000, D2014-D000FI-0138.000). No Economic Analysis is required as this is a directed audit compliance requirement.

In FY 2005, a Business Case Analysis was completed for the LMP and an updated Economic Analysis was completed and validated by the Office of the Deputy Assistant Secretary of the Army-Cost and Economics June 2008. It is available upon request.

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Industrial Operations**

**Capital Purchase Justification**
**($ in Millions)**

| **Line No. 20-03**<br>**Industrial Operations** | **Software Development - Externally Developed**<br>**Common IFF Test Rack Calibration Software** | | |
|---|---|---|---|
| Item Description | **FY 2020** | **FY 2021** | **FY 2022** |
| *Common IFF Test Rack Calibration Software* | 0.259 | 0.000 | 0.000 |
| **Total** | **0.259** | **0.000** | **0.000** |

***Narrative Justification***

The Common Identification Friend or Foe (IFF) Test Rack is used in combination with Versatile Depot Automatic Test Station (VDATS) test equipment to test the functioning of the AN/APX-118, -123 and -124 transponders. The workload is performed in the Transponder Section, Avionics Branch, Avionics & Sensors Division, D/C4ISR employing a Common IFF Test Rack and VDATS test system. It is a requirement for the instruments that make up the Common IFF Test Rack to be calibrated annually.

Currently, the only means to perform the calibration is to disassemble the test rack by removing all the interconnecting cables and wires between the instruments and the test fixture and replace the instruments with a “floater” set of calibrated instruments. The floater set of instruments is regularly transported to the Calibration Laboratory where they are manually calibrated and set aside in reserve until instruments in an IFF rack again require calibration.

Manually calibrating the instruments is time-consuming, and removing the interconnecting wires and cables creates the possibility that the wires and cables will be re-installed incorrectly, forcing technicians to spend time troubleshooting potential reasons for equipment malfunctions. This process also leaves assets vulnerable to damage during transit, the manual calibration process or the test rack instrument replacement procedure.

Purchase of the calibration software algorithm will benefit the process of calibrating the instruments in the IFF Test Rack in the following ways:

1.) Automate the process in conjunction with the Portable Automated Test Equipment Calibrator (PATEC) and VDATS, with little manual intervention

2.) Perform the calibration in significantly less time than the current process of replacing un-calibrated instruments with ones that are calibrated for test purposes

Tobyhanna Army Depot (TYAD) has already purchased a set of “floater” instruments so that regardless of how many Common IFF Rack/VDATS setups are in operation, there will always be a set of calibrated instruments in standby mode. However, over the course of the life of the project, instruments will fail and need to be replaced. Pursuing the new software will allow TYAD to use the existing standby “floater” set of instruments (costing more than the new software) as replacements/spares for those that fail during the normal course of operation of the test systems. Without the software, the Common IFF Test Rack will have to be disassembled to replace the un-calibrated instruments with the floater set and these expensive instruments will still fail over time and will have to be replaced at some point during the duration of the transponder workload.

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Industrial Operations**

**Capital Purchase Justification**
**($ in Millions)**

| **Line No. 21-03**<br>**Industrial Operations** | **Software Development - Externally Developed**<br>**Upgrade of Server Room Control System (SW)** | | |
|---|---|---|---|
| Item Description | **FY 2020** | **FY 2021** | **FY 2022** |
| *Upgrade of Server Room Control System (SW)* | 0.000 | 2.089 | 0.000 |
| **Total** | **0.000** | **2.089** | **0.000** |

***Narrative Justification***

The existing Server Room Control System uses Automated Storage Retrieval System ASRS – Plus (software) to manage two HK4000 Unit Load Storage Retrieval Machines (SRMs), three HK750 Mini Load SRMs, and twenty-four Automated Ground Vehicles. This system controls the retrieving and storing of part's inventory from the ASRS pallet and pan based rack, supplying Corpus Christi Army Depot's (CCAD) kitting operations.

The preferred alternative involves the procurement, installation, and configuration of new Equipment Management System (EMS) software and recommended hardware. The goal is to restore CCAD's ASRS reliability and enhance its capability to function effectively. Anticipated Benefits: The following are high level benefits of the Dematic EMS Upgrade solution and the associated project implementation plan to fully restore system reliability, performance, maintainability and supportability:
Computer system upgrades provide new computer system hardware/software and Dematic EMS system applications that are supportable and compatible with existing material handling system equipment, the LMP Host system, and functions required for ASRS management and material handling equipment control.

If not approved, CCAD would be forced to continue using the existing ASRS solutions with dwindling support. This would conflict with the Risk Management Framework security controls and increase the risk of productivity loss if a failure was experienced within the ASRS solution.
Support for ASRS – Plus will eventually disappear (only two technical experts are left with Dematic and they may soon retire). Without Dematic's technical expertise and support, the needed service and maintainability will be almost impossible. Hence, it is imperative CCAD switches to the Dematic's Equipment Management System software.

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Industrial Operations**

**Capital Purchase Justification**
**($ in Millions)**

| **Line No. 05-26** | | | | **Minor Construction Capabilities** |
|---|---|---|---|---|
| **Industrial Operations** | | | | **Various Minor Construction <$2 Million** |
| Item Description | | **FY 2020** | **FY 2021** | **FY 2022** |
| *Various Minor Construction Capabilities* | | | | |
| *-Replacement* | | 0.595 | 1.505 | 1.589 |
| *-New Construction* | | 0.000 | 1.848 | 0.000 |
| *-Productivity* | | 12.784 | 16.771 | 14.373 |
| | **Total** | **13.379** | **20.124** | **15.962** |

***Narrative Justification***

Various minor construction projects costing less than $2 million will improve the efficiency of the Industrial Operations through new, modernized additions to renovate existing facilities. The construction projects are additions or modifications to meet mission needs and improve the quality of life (safety/environmental concerns).

The projects will increase productivity and allow for quality of life improvements. Specifically, the efficiency of the mission work will improve with better plant layout, better electrical distribution, and improved lighting, heating, ventilation and, air conditioning. The projects specific to quality of life improvements will improve worker morale and eliminate potential health and safety concerns.

If not approved, facility conditions will continue to decline, worker morale will diminish, the work environment will erode, and worker safety and health will continue to be a significant concern.

Economic Analyses have been performed on individual projects when required and are available upon request.

**Army Working Capital Fund**
**Fiscal Year (FY) 2022 Budget Estimates**
**Industrial Operations**

**Capital Budget Execution**
**($ in Millions)**

| FY | Major Category | Initial Request | Current Projected Cost | Approved Change | Explanation |
|---|---|---|---|---|---|
| **2020** | **Non-ADPE** | 31.826 | 28.454 | (3.372) | Review of planned capital investments against capability required to support future customer orders resulted in the cancellation or reprogramming of various projects. Carried over $6.163 million to FY20 and requested $1.369 million in reprogramming which are not included in the current projected cost column. |
| | **ADPE and Telcom** | 3.220 | 6.677 | 3.457 | Public address/Visual information System (PAVIS) became a requirement for TYAD that had not previously been planned for FY 2020. |
| | **Software** | 9.674 | 5.265 | (4.409) | |
| | **Minor Construction** | 19.600 | 13.379 | (6.221) | Review of planned capital investments against capability required to support future customer orders resulted in the cancellation or reprogramming of various projects. Carried over $103 thousand to FY 2020 and requested $824 thousand in reprogramming which are not included in the current proj cost column. |
| | **Total FY 2020** | **64.320** | **53.775** | **(10.545)** | |
| **2021** | **Non-ADPE** | 37.503 | 38.253 | 0.750 | Review of planned capital investments against capability required to support future increase in customer orders. |
| | **ADPE and Telcom** | 8.271 | 9.276 | 1.005 | A Land Mobile Radio System became a requirement for McCalester Army Ammunition Plant that had not previously been planned for FY 2021. |
| | **Software Development** | 8.842 | 8.094 | (0.748) | LMP's Service Now and Suite on Hana requirements ended in FY 2020 |
| | **Minor Construction** | 16.041 | 20.124 | 4.083 | Review of planned capital investments against capability required to support future increase in customer orders. |
| | **Total FY 2021** | **70.657** | **75.747** | **5.090** | |
| **2022** | **Non-ADPE** | 28.158 | 28.158 | 0.000 | |
| | **ADPE and Telcom** | 5.589 | 5.589 | 0.000 | |
| | **Software Development** | 5.328 | 5.328 | 0.000 | |
| | **Minor Construction** | 15.962 | 15.962 | 0.000 | |
| | **Total FY 2022** | **55.037** | **55.037** | **0.000** | |

# The Army Values