



March 2023

# WEAPON SYSTEMS SUSTAINMENT

## DOD Needs to Improve Its Reporting for Warehousing Pilot Program

## Why GAO Did This Study

DLA is DOD's largest logistics combat support agency. It operates 400 warehouses to, among other things, store and distribute parts for producing and repairing weapon systems. The military services and their weapon system contractors have used commercial warehouses to store inventory that were in close proximity to DLA's distribution centers, potentially incurring higher costs and longer delivery times in doing so.

Section 883 of the NDAA for Fiscal Year 2017 authorized a 6-year pilot program for DLA to provide storage and distribution services for weapon systems contractors. Section 883 also required DOD to report on the program and included a provision for GAO to review the report for sufficiency.

This review addresses the extent to which DOD's report assessed (1) the cost-effectiveness of the program and (2) whether the support contracts affected contractors' ability to meet the requirements of their existing primary contracts. GAO reviewed DOD's report and compared it to required elements in the mandate, and interviewed DOD officials.

## What GAO Recommends

GAO made three recommendations, including that DOD perform a complete cost-effectiveness analysis and assess how support contracts may affect contractors' ability to meet their requirements under the primary contracts. DOD concurred with these recommendations.

## WEAPON SYSTEMS SUSTAINMENT

### DOD Needs to Improve Its Reporting for Warehousing Pilot Program

## What GAO Found

The National Defense Authorization Act (NDAA) for Fiscal Year 2017 authorized a 6-year pilot program for the Defense Logistics Agency (DLA) to provide storage and distribution services for weapon system contractors. Specifically, the Department of Defense (DOD) was authorized to enter into no more than five contracts for contractors to use DLA's warehouses to store and distribute weapon system parts. DOD was also required to submit a report by the end of 2021 describing the cost-effectiveness of the pilot program and how the warehousing contracts affected the contractors' ability to meet the requirements of their existing contracts to support weapon systems sustainment. DOD issued its report to Congress in March 2021 and recommended the pilot program be made permanent and expanded to non-weapon systems. DOD further submitted a legislative proposal for the NDAA for Fiscal Year 2023 for Congress to enact its recommendations. The James M. Inhofe NDAA for Fiscal Year 2023 extended the pilot program for an additional year.

GAO found that DOD's report did not fully assess the cost-effectiveness of the pilot program. DOD guidance establishes seven elements that must be addressed for a complete cost-effectiveness analysis. GAO found that DOD substantially addressed one, partially addressed five, and did not address one element. For example, DOD's report provided some cost information for three existing contracts in the pilot program. However, the report included projected rather than actual costs, and did not fully evaluate alternatives. DOD officials told GAO that they were not aware of DOD's guidance identifying the elements of a complete cost-effectiveness analysis and did not use other relevant guidance. By applying the guidance and conducting a complete cost-effectiveness analysis, DOD can help ensure that Congress has the information it needs to evaluate the costs and benefits of the pilot program.

DOD's report did not comprehensively assess how the warehousing contracts affected contractors' ability to meet the requirements of their existing primary contracts. For example, DOD's report described contractor's views but did not include any supporting data or information. The report also did not include challenges described to GAO by stakeholders managing these contracts. Without this assessment, DOD may not have complete information on the potential effects of these contracts to inform congressional decisions about the pilot program.

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Abbreviations

DLA	Defense Logistics Agency
DOD	Department of Defense
FY	Fiscal Year
OSD	Office of the Secretary of Defense
TDSI	Thales Defense & Security, Inc.
USD(A&S)	Under Secretary of Defense for Acquisition and Sustainment
USD(C)/CFO	Under Secretary of Defense (Comptroller)/Chief Financial Officer

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March 9, 2023

The Honorable Jack Reed  
Chairman  
The Honorable Roger Wicker  
Ranking Member  
Committee on Armed Services  
United States Senate

The Honorable Mike Rogers  
Chairman  
The Honorable Adam Smith  
Ranking Member  
Committee on Armed Services  
House of Representatives

The Defense Logistics Agency (DLA)—the largest logistics combat support agency of the Department of Defense (DOD)—provides commodities and services to support U.S. military forces. DOD operates a large network of approximately 4,000 warehouses in the continental United States with 602.4 million cubic feet of storage capacity. Of these, DLA operates 400 warehouses with 275.1 million cubic feet of storage capacity. DOD, including DLA, uses these warehouses to store and distribute parts for the production, maintenance, or repair of weapon systems. In March 2019, DOD reported that contractors also stored about 62.8 million cubic feet of inventory for the military services in commercial warehouses outside of military installations.<sup>1</sup> We previously reported that while some commercial warehouses were close to existing DOD installations, they were not co-located with depot repair facilities, which could lead to increased costs and longer delivery times.<sup>2</sup>

Section 883 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2017 (Section 883) authorized a 6-year pilot program under which the Secretary of Defense could provide storage and distribution

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<sup>1</sup>Department of Defense, "NWI Final Recommendations Technical" (briefing presented before the Department of Defense's Chief Management Officer, Reform Management Group, and Deputy's Management Action Group, Washington, D.C., March 2019).

<sup>2</sup>GAO, *Supply Chain Management: DOD Could More Efficiently Use Its Distribution Centers*, [GAO-17-449](#) (Washington, D.C.: June 21, 2017).

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services for weapon system support contractors.<sup>3</sup> DOD subsequently issued implementation guidance that delegated to DLA the authority to enter into no more than five public-private partnerships with contractors to provide warehousing services (hereafter, “support contracts”). These support contracts are arrangements between a support provider and a private sector organization to perform defense-related work or use defense-related facilities or equipment. Section 883 also required DOD to submit a report describing the cost-effectiveness of the pilot program and how support contracts in the pilot program affected meeting the requirements of the primary contracts. Primary contracts are the contracts between a military service and a contractor to support a weapon system’s sustainment.<sup>4</sup> DOD released its report, *Report to Congress on Pilot Program for Distribution Support Services for Weapon Systems Contractors*, in March 2021.

Section 883 also included a provision for us to review DOD’s report for sufficiency and to provide any recommendations to the House and Senate Armed Services Committees.<sup>5</sup> In reviewing DOD’s report for sufficiency, our report addresses the extent to which DOD’s report assessed (1) the cost-effectiveness of the pilot program and (2) whether the support contracts created under the pilot program affected the contractors’ ability to meet the requirements of their existing primary contracts.

To address our objectives, we reviewed DOD’s report to assess whether it addressed the requirements of the mandate. For our first objective, we analyzed cost information in DOD’s report and reviewed other DLA cost information provided by DLA. We also interviewed DLA officials regarding the steps they took to analyze and prepare cost-effectiveness information

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<sup>3</sup>Pub. L. No. 114-328, § 883 (2016). For the purposes of this report, we are referring to storage and distribution as warehousing services.

<sup>4</sup>Primary contracts, in this report, are the weapon system contracts between a military service and a contractor. For example, these contracts can be for contractor-provided parts for U.S. Air Force F-15 aircraft or U.S. Army Blackhawk helicopters, among others. For purposes of this report, we use the term “support contracts” to refer to the public-private partnership agreements between DLA and the same contractor for storing and distributing these weapon system parts.

<sup>5</sup>The NDAA for FY 2017, which included Section 883, was enacted on December 23, 2016 and authorized the 6-year pilot program. Section 883 required DOD to submit its report no later than the end of the 4th year of the pilot program operation. The pilot began in 2017 and, as of December 2022 is currently in its 5th year of operation.

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for DOD's report. We assessed this documentary and testimonial evidence against DOD guidance on the seven elements of a cost-effectiveness analysis, as identified in DOD Instruction 7041.03, *Economic Analysis for Decision-making*.<sup>6</sup> We categorized the cost-effectiveness information into three areas: (1) those that substantially addressed the elements; (2) those that partially addressed the elements; or (3) those that did not address the elements.

For our second objective, we reviewed DOD's report to determine the extent to which DLA assessed whether the support contracts created under the pilot program affected the contractors' ability to meet the requirements of their primary contracts. We also interviewed DLA officials about their views on the assessment and efforts to conduct the assessment. In addition, we interviewed military service officials, DOD civilians, and contractor organizations involved in DOD's pilot program to gain an understanding of their roles in the warehousing program for weapon systems. A more detailed discussion of our objectives, scope, and methodology can be found in appendix I.

We conducted this performance audit from March 2022 to March 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## Background

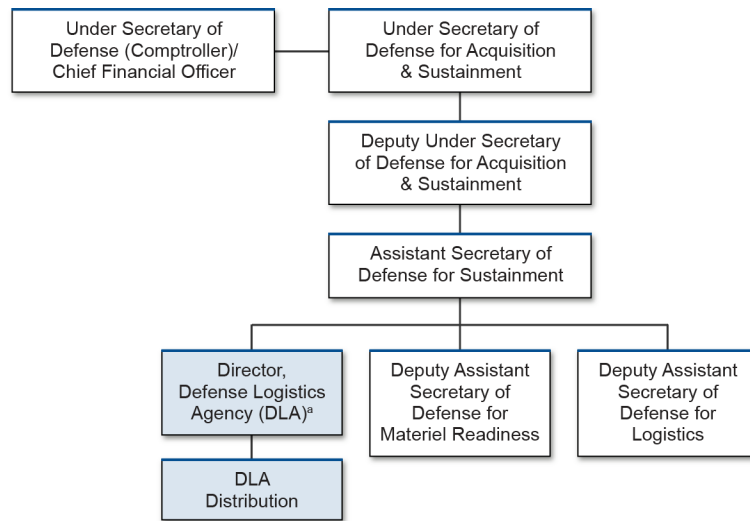
### Roles and Responsibilities for Managing Warehousing Services

Several DOD organizations, including DLA, have roles and responsibilities for managing and providing warehousing services to the U.S. Armed Forces, as shown in figure 1 and described below.

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<sup>6</sup>DOD Instruction 7041.03 establishes policy, assigns responsibilities, and provides procedures for conducting cost-effective economic analyses to evaluate the costs and benefits of any government decisions to initiate, review, or expand a program or project alternatives under the Office of Management and Budget Circular A-94. DOD Instruction 7041.03, *Economic Analysis for Decision-making* (Sept. 9, 2015) (incorporating change 1, Oct. 2, 2017). The Office of Management and Budget Circular A-94 provides guidance for conducting benefit-cost and cost-effectiveness analyses, which are specific types of economic analyses. Office of Management and Budget, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*, OMB Circular No. A-94 (October 29, 1992).

**Figure 1: Key Stakeholders Managing Warehousing Services**



Source: GAO analysis of Department of Defense documentation. | GAO-23-105929

<sup>a</sup>DLA is a designated defense agency, which is an organizational entity of the Department of Defense performing a supply or service activity common to more than one military department.

- **Under Secretary of Defense (Comptroller) Chief Financial Officer (USD(C)/(CFO))** establishes the policies and procedures for DOD's financial management. As the CFO of DOD, oversees all financial management activities for the programs and operation of DOD.<sup>7</sup>
- **Under Secretary of Defense for Acquisition and Sustainment (USD(A&S))** establishes policies and supervises all elements of DOD sustainment, including logistics and distribution, maintenance, and materiel readiness.<sup>8</sup>
- **Deputy Under Secretary of Defense for Acquisition and Sustainment** advises and assists the USD(A&S) in carrying out

<sup>7</sup>DOD Directive 5118.03, *Under Secretary of Defense (Comptroller)/Chief Financial Officer, Department of Defense (USD(C)/CFO)* (April 20, 2012) (incorporating change 1, effective May 29, 2020).

<sup>8</sup>DOD Directive 5135.02, *Under Secretary of Defense for Acquisition and Sustainment (USD(A&S))* (July 15, 2020).



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responsibilities, fulfilling functions, managing relationships, and exercising authorities of the office.<sup>9</sup>

- **Assistant Secretary of Defense for Sustainment** prescribes policies and procedures for the conduct of logistics, maintenance, materiel readiness, and sustainment support, to include supply and transportation, and monitor and review these activities; also exercises authority, direction and control over DLA.
- **Deputy Assistant Secretary of Defense for Materiel Readiness** serves as the principal advisor for policies and procedures for maintenance support of major weapon systems and military equipment.
- **Deputy Assistant Secretary of Defense for Logistics** is responsible for the department's logistics strategy and policy, supply, warehousing services, property and equipment, transportation, and program support.
- **Defense Logistics Agency (DLA)** is responsible for providing procurement and leasing support and supply chain management for commodities and services that are determined to be appropriate for integrated management by a single agency on behalf of all DOD components, or that have been otherwise specifically assigned to DLA for such management.
- **DLA Distribution** serves as DOD's joint warehousing services provider. It receives, stores, issues and distributes critical material to achieve warfighter readiness.

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## Revision of DOD Guidance and Policies

Since 2017, DOD has issued and revised guidance relevant to improving capacity at its warehouses, as detailed here.

- **January 2017.** The department revised DOD Instruction 5000.02, *Operation of the Defense Acquisition System*, to require that program managers who are responsible for contracts with DOD maintenance depots store government-owned inventory at DLA distribution centers

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<sup>9</sup>DOD Directive 5135.03, *Deputy Under Secretary of Defense for Acquisition and Sustainment* (Dec. 10, 2020).

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when located in the same geographic areas as those DOD maintenance depots.<sup>10</sup>

- **March 2019.** The department revised DOD Instruction 4140.01, *DOD Supply Chain Materiel Management Policy*, to assign responsibilities for the management of materiel across the DOD supply chain including warehousing services for weapon systems.<sup>11</sup>
- **July 2019.** The department issued DOD Manual 4140.70, *DOD Supply Chain Materiel Management Procedures for Storage and Material Handling*, which, among other things, provides standardized procedures for managing storage space.<sup>12</sup>
- **November 2021.** The department issued DOD Instruction 5000.91, *Product Support Management for the Adaptive Acquisition Framework*, which states that the product support manager should use existing DLA or other DOD warehousing to the maximum extent practicable before establishing capacity at commercial facilities.<sup>13</sup>

In 2017, the department also revised guidance regarding public-private partnerships. Specifically, in November 2017, the department revised DOD Instruction 4151.21, *Public-Private Partnerships for Product Support*, which states that the use of public-private partnerships or support agreements by DOD is encouraged to facilitate innovation and enable the best use of public and private sector capabilities.<sup>14</sup>

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<sup>10</sup>See [GAO-17-449](#). In January 2020, DOD updated DOD Instruction 5000.02 and it is now titled, *Operation of the Adaptive Acquisition Framework* (Jan. 23, 2020) (incorporating change 1, effective June 8, 2022). The provision we cite is not in the current version of the instruction.

<sup>11</sup>DOD Instruction 4140.01, *DOD Supply Chain Materiel Management Policy* (Mar. 6, 2019).

<sup>12</sup>DOD Manual 4140.70, *DOD Supply Chain Materiel Management Procedures for Storage and Material Handling* (Oct. 12, 2017) (incorporating change 2, effective July 15, 2019).

<sup>13</sup>DOD Instruction 5000.91, *Product Support Management for the Adaptive Acquisition Framework* (Nov. 4, 2021).

<sup>14</sup>DOD Instruction 4151.21, *Public-Private Partnerships for Depot-Level Maintenance*. (April 25, 2007) was reissued as DOD Instruction 4151.21, *Public-Private Partnerships for Product Support*. (Nov. 21, 2016) (incorporating change 4, effective July 31, 2019). See also, 10 U.S.C. § 2474, Centers of Industrial and Technical Excellence; designation; public-private partnerships.

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## Overview of DOD Efforts to Consolidate and Transition Commercial Warehouses to DOD

The Office of the Secretary of Defense (OSD) has implemented several efforts to improve the utilization of DOD warehouses, including those held by DLA. In fiscal year 2018, OSD established the Non-Tactical Warehouse Initiative to reduce DOD's warehousing costs by consolidating its warehousing network. Through this initiative, OSD found, among other things, that commercial warehouses create redundancies that increase the cost of DOD's warehousing network.<sup>15</sup> As a result, in October 2019 OSD established the Warehouse Utilization Initiative to, among other things, move DOD inventory from commercial warehouses to DOD warehouses, develop technologies to reduce cost, and increase utilization of DOD warehouses to 75 percent.<sup>16</sup>

DLA also examined the use of commercial warehouses that store DOD inventory and found instances where the military departments were using commercial warehouses to store inventory that was otherwise located in close proximity to DLA distribution centers.<sup>17</sup> Specifically, DLA found that contractors managed \$11.7 billion in DOD inventory at commercial warehouses. For example, the Army Stryker Program was managing inventory in commercial warehouses that were located near DLA-owned distribution centers in Anniston, Alabama and Puget Sound, Washington.<sup>18</sup> In September 2016, DLA issued a study which estimated

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<sup>15</sup>Department of Defense, "NWI Final Recommendations Technical" (briefing presented before the Department of Defense's Chief Management Officer, Reform Management Group, and Deputy's Management Action Group, Washington, D.C., March 2019).

<sup>16</sup>Office of the Under Secretary of Defense for Acquisition and Sustainment, OSD Logistics Reform-Warehouse Utilization Team, *Warehouse Utilization Update to GAO* (April 2021).

<sup>17</sup>Defense Logistics Agency, *Storage & Distribution Product Support Strategy Assessment* (September 2016).

<sup>18</sup>In June 2017, we reported on the steps that DOD had taken to more efficiently use DLA's 17 distribution centers. We found that DOD had not taken the steps to assess the extent to which the department could further use its existing authorities to minimize unnecessary overlap or duplication in its network of distribution centers. We recommended that DOD assess and direct actions, as appropriate, that could be taken using existing authorities to close, realign, or dispose of existing distribution centers. DOD concurred with the recommendation and has taken steps to partially address it. Specifically, DOD officials stated in April 2021 that DOD had begun implementation of the recommended actions at two of the four locations. Also, DOD officials stated in December 2021 that funding has been obtained to continue implementation, and DOD revised its timeline to implement the recommended actions at the four locations to September 2023. GAO, *Supply Chain Management: DOD Could More Efficiently Use Its Distribution Centers*, [GAO-17-449](#) (Washington, D.C.: June 21, 2017). For a listing of relevant past GAO work, see the Related GAO Products page at the end of this report.

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that moving inventory for the Army Stryker Program from commercial warehouses to DLA distribution centers in Anniston, Alabama and San Joaquin, California could save DOD approximately \$4 million in storage and distribution costs in the first year.<sup>19</sup> DLA officials stated that this analysis and briefing was the basis for the legislative proposal for the pilot program found in Section 883.

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## Overview of DOD's Pilot Program and Report to Congress on Warehousing

In fiscal year 2017, Section 883 authorized a 6-year pilot program for DLA to provide warehousing services for contractors who perform sustainment of weapon systems.<sup>20</sup> The James M. Inhofe NDAA for FY 2023 extended the pilot program for an additional year.<sup>21</sup> DLA started the pilot program in 2017 and, as of 2022, is in the 5th year of the program.

To perform these services, DLA could enter into no more than five support contracts for contractors to use DLA warehouses for these weapon systems. As of December 2022, DLA had entered into one support contract with Thales Defense & Security, Inc., three support contracts with Parker-Hannifin/Parker Aerospace Corporation, and, according to DOD, one support contract with Northrop Grumman. DOD projected that the five support contracts would provide a total of approximately \$1.9 million in cost paid to DOD by the contractors; and a projected total of approximately \$2.2 million in cost avoidance or cost reduction to the contractors. The total size of the warehouse storage capacity for these five support contracts is approximately 118,000 cubic feet (see table 1).<sup>22</sup>

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<sup>19</sup>Defense Logistics Agency, *Storage & Distribution Product Support Strategy Assessment* (September 2016).

<sup>20</sup>The NDAA for FY 2017, which included Section 883, was enacted on December 23, 2016 and authorized the 6-year pilot program. Section 883 required DOD to submit its report no later than the end of the 4th year of operation of the pilot program. The pilot began in 2017 and, as of December 2022 is in its 5th year of operation.

<sup>21</sup>Pub. L. No. 117–263, § 819 (2022).

<sup>22</sup>To calculate the total storage capacity for the five warehouse facilities, we converted the square footage of the three facilities to cubic feet and used an average height ceiling of 10 feet.

**Table 1: DOD Primary and Support Contracts for Warehousing Pilot Program**

Characteristics	Thales Defense & Security, Inc. (TDSI)	Parker-Hannifin/Parker Aerospace Corporation (Parker) 1	Parker 2	Parker 3	Northrop Grumman <sup>a</sup>
Primary Contract Award Date <sup>b</sup>	December 2016	August 2017	July 2022	March 2020	May 2023
Signing Date for Support Contract	March 2019	January 2020	May 2020 <sup>c</sup>	April 2021	December 2022
Execution Date for Support Contract <sup>d</sup>	June 2019	February 2020	July 2022	July 2021	May 2023
Weapon System	Marine Corps Optimized Top Owl equipment <sup>e</sup>	Army Blackhawk UH-60 cylinders	Air Force legacy aircraft	Air Force F-15 enhanced engine display program	Air Force B-1 bomber low observable array
Length of Support Contract <sup>f</sup>	3 years	3 years	5 years	5 years	5 years
Projected Total Cost Paid by Contractor to DOD	\$116,161	\$236,400	\$753,118	\$240,680	\$592,360
Projected Total Contractor Cost Reduction or Avoidance	\$218,403	\$600,000	> \$878,375	\$9,988	\$500,000
Location of Support Services	Naval Air Station North Island, California	Corpus Christi Army Depot, Texas	Hill Air Force Base, Utah	Warner Robins Air Force Base, GA	Tinker Air Force Base, Oklahoma
Facilities <sup>g</sup>	3,600 cubic feet of warehouse space	1,800 square feet of warehouse and office space	8,700 square feet of warehouse space	144 square feet of warehouse shelving space	7,500 cubic feet of warehouse space

Source: GAO analysis of Department of Defense (DOD) data. | GAO-23-105929.

<sup>a</sup>DOD provided the information on the Northrop Grumman contract as part of its comments on the draft of this report.

<sup>b</sup>Primary contracts are the weapon system contracts between a military service and a contractor. For example, these contracts can be for contractor-provided parts for U.S. Army Blackhawk helicopters or U.S. Air Force F-15 aircraft, among others. Support contracts are the public-private partnership agreements between the Defense Logistics Agency and the contractor for storing and distributing these weapon system parts. In this report, we refer to these public-private partnership agreements as “support contracts.”

<sup>c</sup>For the second Parker contracts, Air Force officials told us that the primary contract was delayed to July 2022 because of COVID-19 shutdowns and distribution interruptions within the global supply chain. As a result, the support contract, which was initially signed in May 2020, was delayed until the primary contract could be awarded.

<sup>d</sup>DLA provided us with the execution dates of the contracts, which they identified as being the dates the contracts were first used. DOD included three support contracts in its report (TDSI, Parker 1, and Parker 2). According to DOD, the department entered into its fourth support contract, Parker 3, in July 2021; and is expected to enter into its fifth support contract, Northrop Grumman, in May 2023, after issuing its report to Congress.

<sup>e</sup>The Optimized Top Owl equipment is a helmet mounted sight and display system used by U.S. Marine Corps H-1 helicopter pilots.

<sup>f</sup>Officials stated that DOD extended the TDSI support contract from March 2022 to December 2026. In addition, DLA officials stated that the Parker 1 support contract may also be extended.

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<sup>9</sup>To calculate the total storage capacity for the five warehouse facilities, we converted the square footage of the three facilities to cubic feet and used an average height ceiling of 10 feet.

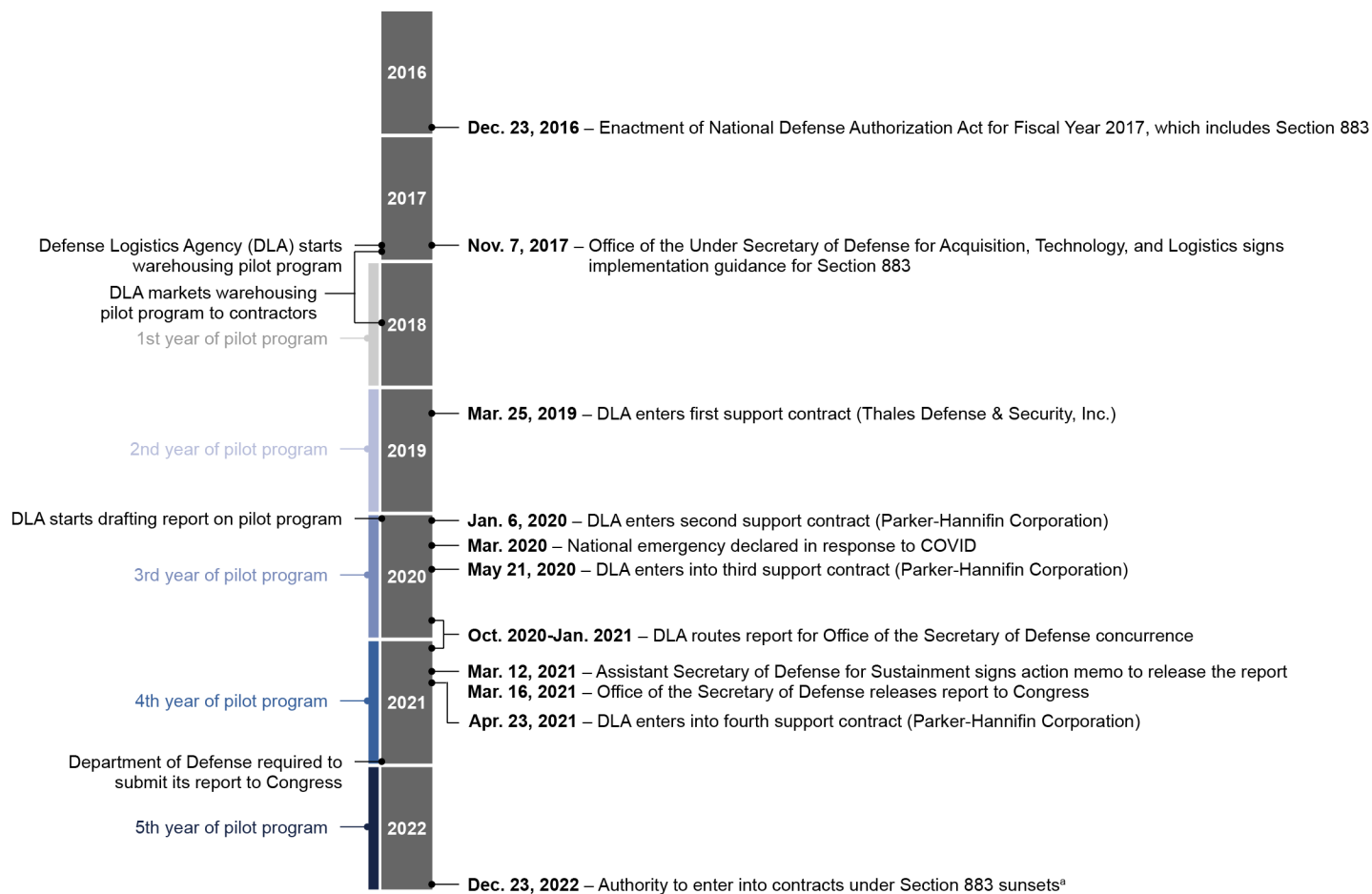
Section 883 also required DOD to submit a report to congressional committees describing the cost-effectiveness of the pilot program and how support contracts in the pilot program affected meeting the requirements of primary contracts.<sup>23</sup> The Under Secretary of Defense for Acquisition, Technology, and Logistics issued a memorandum providing guidance to the Director, DLA to, among other things, submit this report to OSD.<sup>24</sup> In March 2021, DOD released its report to Congress on DLA's warehousing pilot program (see figure 2).

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<sup>23</sup>Pub. L. No. 114–328, §883 (2016).

<sup>24</sup>Under Secretary of Defense for Acquisition, Technology, and Logistics Memorandum, *2017 National Defense Authorization Act (NDAA) Section 883 Implementation Guidance* (Nov. 7, 2017). The position of the Under Secretary of Defense for Acquisition, Technology, and Logistics was subsequently divided into two positions: the Under Secretary of Defense for Research and Engineering and the Under Secretary of Defense for Acquisition and Sustainment.

**Figure 2: Timeline of DOD’s Warehousing Pilot Program for Weapon Systems Contractors**



Source: GAO analysis of Department of Defense (DOD) documentation. | GAO-23-105929

<sup>a</sup>On December 23, 2022, the President signed the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023, which extended the sunset date for authority to enter into contracts under section 883 by an additional year.

In its report, DOD included recommendations to (1) make the program permanent and (2) expand the scope of the program. Specifically, it suggested:

- removing the limit on the maximum number of public-private partnerships eligible to participate in the program,
- expanding the authority to include agreements for non-weapon systems, and

- providing authority to partner “umbrella” style, where multiple weapon systems are bundled together under a single overarching public-private partnership contract with a given partner.

DOD also submitted a legislative proposal for the NDAA for FY 2023 for Congress to consider making the pilot program permanent and to expand it to non-weapon systems. The James M. Inhofe NDAA for FY 2023 extended the pilot program for an additional year.<sup>25</sup>

## DOD’s Report on Its Warehousing Pilot Program Provided an Incomplete Assessment of Cost-Effectiveness

We found that DOD’s report provided an incomplete assessment of the cost-effectiveness of the DOD warehousing pilot program. DOD Instruction 7041.03 provides that a complete cost-effectiveness analysis should address the following seven elements: objective, assumptions, alternatives, cost and benefits, comparison of alternatives, sensitivity and uncertainty analyses, and results and recommendations.<sup>26</sup> DOD’s report substantially addressed one element, partially addressed five elements, and did not address one element, as shown in table 2.

**Table 2: GAO Assessment of DOD’s Report on its Warehousing Pilot Program Compared to DOD’s Elements of a Cost-Effectiveness Analysis**

DOD elements	Short description	GAO assessment
	A cost effectiveness analysis should:	
1. Objective	Clearly define and quantify the function to be accomplished (to the extent possible) and should not assume specific means of achieving the desired results.	●
2. Assumptions	Be based on facts and data whenever possible, and assumptions must account for uncertainties occurring in the future.	◐
3. Alternatives	Document and discuss all reasonable ways of satisfying the objective.	◐
4. Cost and benefits	Quantify the costs and benefits associated with each alternative under consideration and discuss significant costs and benefits that cannot be quantified.	◐
5. Comparison of alternatives	Compare the costs and benefits of each alternative, and rank them according to net present value.	◐
6. Sensitivity and uncertainty analyses	Account for uncertainties by testing the sensitivity of the results to various factors.	○

<sup>25</sup>Pub. L. No. 117–263, § 819 (2022).

<sup>26</sup>DOD Instruction 7041.03. See appendix II for additional information on DOD’s elements for a cost-effectiveness analysis. DOD Instruction 7041.03 provides procedures for conducting cost-effective economic analyses.



DOD elements	Short description	GAO assessment
	A cost effectiveness analysis should:	
7. Results and recommendations	Begin with a summary of the analysis and an interpretation of the results, to include a recommendation of the preferred alternative. The results should be documented down to the most basic inputs to provide an auditable document.	●

Legend: ● substantially addressed    ● partially addressed    ○ did not address

Source: GAO analysis of Department of Defense (DOD) information. | GAO-23-105929.

1. **Objective.** We found that DOD’s report **substantially addressed this element**. According to DOD guidance, the statement of the objective should clearly define the function to be accomplished and should not assume the specific means of achieving the desired result. The guidance adds that making such an assumption prejudices results and should be avoided because it undermines the purpose of the analysis. The report clearly defines its function by stating that the report addresses the cost-effectiveness of the pilot program as required by the mandate. In addition, the statement of the objective did not assume the specific means of achieving the desired result.
2. **Assumptions.** We found that DOD’s report **partially addressed this element**. According to DOD guidance, an analysis should be based on facts and data whenever possible; and assumptions must account for uncertainties occurring in the future. DOD’s report based its analysis on some facts and data. For example, DOD provides facts relating to the location of the warehouses and cost data to support its analysis. However, most of the data were projected costs because the pilot program was in its early phases when DOD started to draft its report. According to DLA officials, they started drafting this report in early 2020 because they could not conduct outreach to contractors for new support contracts due to COVID-19. As a result, at that time, DOD reported cost data for three of the five contracts for the pilot program. DOD had 1 year of cost data for one of its support contracts and a couple of months’ worth of data for another support contract when it began to draft. For the third support contract, DOD reported projected costs because that contract was delayed.

In addition, we found that DOD did not account for future uncertainties. For example, in its report, DOD provided projected costs for the three support contracts and local market rates for the area where the commercial warehouses would be located. However, DOD did not explain how assumptions or uncertainties, such as changes in local market and labor rates or inflation could affect its analysis of the costs and benefits of the program. According to DLA

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officials, they assumed that the market rates and inflation would not change.

3. **Alternatives.** We found that DOD's report **partially addressed this element**. DOD guidance states that all reasonable ways of satisfying the objective must be documented and discussed. It also says that careful attention must be given to identifying alternatives. In its report, DOD documented and discussed three alternatives for contractors in the pilot program to obtain warehousing services: (1) from a commercial vendor; (2) from their own facility; or (3) from DLA. In its analysis, DOD provided the distance from the military installation to the contractor's warehouse and to a vendor's commercial warehouse as opposed to DLA's warehouse located within the military installation. For example, for one support contract, the report noted that the contractor's warehouse was about 2,700 miles from the military installation, and a potential commercial warehouse would be 15 miles from the military installation, as opposed to DLA's warehouse located less than 1 mile from the depot repair facility on the military installation.

In addition, in documenting the cost estimate for one of the alternatives for commercial warehousing services, DLA officials told us they contracted with Accenture to obtain a cost estimate for the first support contract in the pilot program. Specifically, DLA requested an estimate for what it would cost a contractor to set up a commercial warehouse in the greater San Diego area. Accenture estimated it would cost the contractor \$218,403 over 3 years for a commercial warehouse, labor, and local delivery trucks, among other things.

However, DOD did not carefully identify other alternatives. For example, DOD's report did not articulate whether DOD considered more than one commercial warehouse location when calculating its cost estimate or whether one commercial warehousing estimate was sufficient. In addition, DOD did not consider whether the contractor could use other DOD warehouses to store the military services' inventory as another alternative.

4. **Costs and Benefits.** We found that DOD's report **partially addressed this element**. DOD guidance states that the costs and benefits associated with each alternative under consideration should be quantified whenever possible and that, minimally, qualitative costs or benefits should be discussed in narrative format. DOD's report provides costs and benefits of the alternatives under consideration. For example, the report estimated the costs for contractors obtaining

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warehousing and distribution services from commercial vendors. Specifically, for one support contract, DOD's report estimated it would cost the contractor more than \$878,375 over 5 years for a commercial warehouse, labor costs, and delivery trucks in the area around Hill Air Force Base, Utah. In contrast, under an alternative scenario where DLA provides these services under a support contract with the same contractor, DLA would obtain \$753,118 in revenue from the contractor. In addition, as part of the narrative section, DOD's report also notes the benefits of the program, such as proximity to depot repair locations afforded by the co-location of DLA's warehouses on military installations where such repairs take place. The report emphasizes that this co-location has had a positive effect on sustainment because repair parts are readily available.

However, we found that DOD did not describe some of the costs and benefits for each alternative. Specifically, for the three alternatives considered by DOD, the report did not quantify the cost and benefits for each contractor. For example, the report did not differentiate the costs and benefits for each contractor to provide their own warehousing, as opposed to paying a vendor or DLA for warehousing services. In addition, DOD's report did not include other costs for providing warehousing services such as training, office equipment, and material handling equipment (i.e., forklift), among other costs.

5. **Comparison of alternatives.** We found that DOD's report **partially addressed this element**. According to DOD guidance, costs and benefits of each alternative should be compared and each alternative ranked according to net present value. To determine net present value, it is necessary to discount future benefits and costs to reflect the time value of money.<sup>27</sup> DOD's report compares some of the costs and benefits of the alternatives. For example, the report compares (1) contractors' costs to provide warehousing services at their own facility to the costs of using a DLA warehouse; (2) contractors' costs to provide warehousing services from a commercial vendor to the costs of using a DLA warehouse; and (3) travel distance from the contractors' or commercial vendor's warehouse to the military

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<sup>27</sup>According to OMB Circular A-94, net present value is the discounted monetized value of expected net benefits (i.e., benefits minus costs) and is the standard criterion for deciding whether a program can be justified on economic principles. Net present value is computed by assigning monetary values to benefits and costs, discounting future benefits and costs using an appropriate discount rate, and subtracting the total sum of discounted costs from the sum total of discounted benefits. Office of Management and Budget, Circular No. A-94 (Oct. 29, 1992).

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installation versus travel distance from DLA's warehouse to the repair facility on the military installation.

However, DOD did not rank each alternative according to net present value. We found that DOD's analysis did not discount future costs to reflect the time value of money or adjust dollar amounts for inflation to reflect changes in purchasing power. DLA officials told us they did not rank each alternative according to net present value and they did not adjust dollar amounts for inflation because they assumed inflation would be static. However, inflation has increased and would probably affect their cost estimates.

6. **Sensitivity and uncertainty analyses.** We found that DOD **did not address this element** because it did not perform a sensitivity analysis to support the analysis in its report. According to DOD guidance, an analyst should account for uncertainties by testing the sensitivity of the results to various factors, such as assumptions related to inflation and the discount rate for the government's cost of borrowing, among other factors. A sensitivity analysis would consider assumptions made regarding the fluctuations in the labor market, local warehousing rates, the rate of inflation, and changes in capacity at DLA warehouses. DLA officials told us that they did not conduct or consult with stakeholders to perform a sensitivity analysis because there were too many unknown variables.
7. **Results and recommendations.** We found that DOD **partially addressed this element**. DOD guidance states that an analysis report should begin with a summary of the analysis and interpretation of the results—to include a recommendation of the preferred alternative. The guidance also requires that the results of the analysis—including all calculations and sources of data—be documented down to the most basic inputs to provide an auditable document.

DOD's report had an executive summary, which highlights the financial advantages of the warehousing pilot program and recommends making the pilot program permanent and expanding its scope. However, DOD's report did not fully describe the basic inputs and data sources DOD used to estimate the costs to contractors to obtain commercial warehousing services. For example, DOD's report provides a basic calculation of the net financial impact of providing warehousing services to the contractors. This calculation included DLA's revenue and resources and the contractors' cost avoidance and cost savings. Specifically, the report states that one of the support

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contracts would save approximately \$200,000 per year by, among other things, eliminating its existing commercial warehouse, delivery truck, and driver costs. However, the report did not list the source of this data. In addition, the report did not provide the most basic inputs for some cost data, such as DLA's resourcing costs.

DOD Instruction 7041.03, *Economic Analysis for Decision-making*,<sup>28</sup> establishes policy, assigns responsibilities, and provides procedures for conducting cost-effective economic analyses to evaluate the costs and benefits of any government decisions to initiate, review, or expand a program or project alternatives under the Office of Management and Budget Circular A-94.<sup>29</sup> In addition, *Standards for Internal Control in the Federal Government* states that management should use quality information to make informed decisions and achieve the entity's objectives.<sup>30</sup>

DOD officials told us that they did not consult DOD Instruction 7041.03 when conducting the cost-effectiveness analysis of the pilot program because they were not aware of its existence. Further, these officials stated that had OSD provided notice or otherwise communicated that DOD Instruction 7041.03 was a resource for this purpose, they would have consulted it. According to DOD officials, they did not consider any other related DOD guidance, policies, or best practices when conducting its analysis of the program.

Without DOD developing a complete cost-effectiveness analysis, DOD and Congress will not have the quality cost information it needs to evaluate the existing pilot program. Moreover, DOD and Congress do not have the necessary cost information to inform decisions about whether to expand the pilot program or make it permanent.

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<sup>28</sup>DOD Instruction 7041.03.

<sup>29</sup>Office of Management and Budget, Circular No. A-94 (Oct. 29, 1992).

<sup>30</sup>GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 10, 2014).

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## DOD's Report on Its Warehousing Pilot Program Did Not Comprehensively Assess the Effect of Support Contracts on the Execution of Primary Contracts

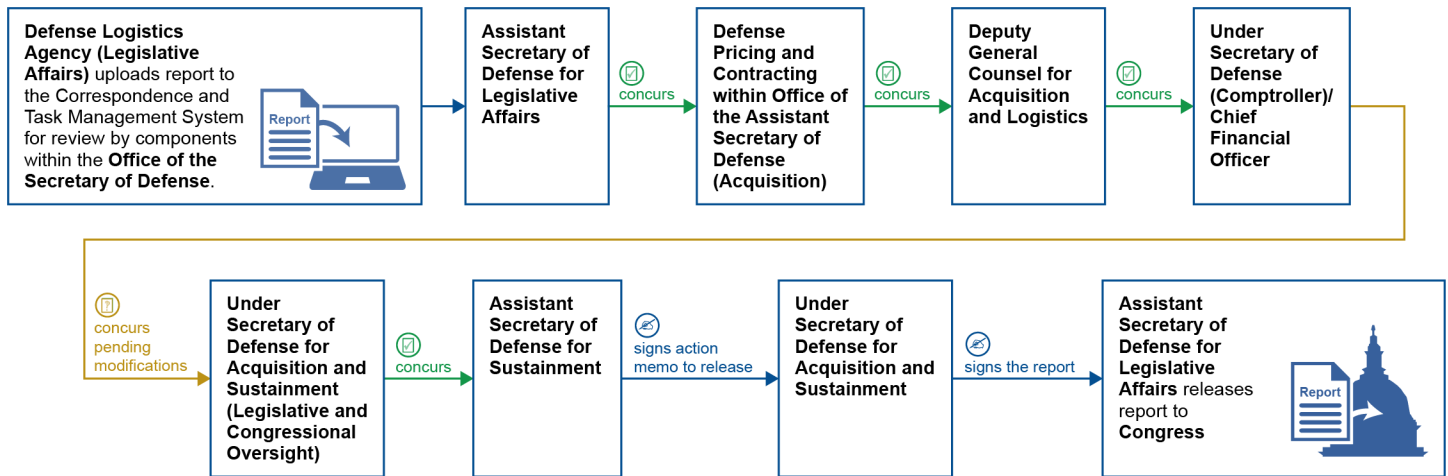
DOD's report included comments from key stakeholders, such as contractor personnel and DOD civilians, about how primary contracts were positively affected by the support contracts created under DLA's pilot program. For example, one contractor and DOD civilians affiliated with the support contracts noted the following positive effects:

- reduced staff and space needed by contractors to store their inventory at DLA warehouses,
- reduced distance between the depot (i.e., repair location) and the warehouse, and
- savings from using existing space that the military services are already paying for instead of paying for commercial warehouse space.

DLA officials told us that it was important to include these positive comments because these stakeholders are managing these contracts and are able to discuss the benefits of the program. However, DOD officials and the stakeholders could not provide any analysis or evidence to support these comments.

DOD's report also did not include a comprehensive assessment of how the support contracts created under the DLA pilot program affected the contractors' ability to meet the weapon system sustainment requirements of their primary contracts. During the internal departmental review of DOD's report (see figure 3), officials from the office of USD(C)/CFO commented that the report did not provide such an assessment. Specifically, these officials concurred with DOD's report with the understanding that DOD would modify it to include this information. However, DLA officials did not address this comment in the report. Additionally, DLA officials did not respond to how or whether they would address these comments, according to officials from the office of USD(C)/CFO. Moreover, these USD(C)/CFO officials told us that DOD submitted its report without clearly articulating how the support contracts created under the pilot program affected the requirements of the primary contracts.

**Figure 3: Review Process of DOD's Report to Congress on Pilot Program for Distribution Support Services for Weapon Systems Contractors**



Source: GAO analysis of Department of Defense (DOD) documentation. | GAO-23-105929

According to DLA officials, they addressed the Section 883 provision to describe how support contracts affected meeting the requirements of primary contracts by describing the benefits of the program and what officials said about how the program has positively affected the military services.<sup>31</sup> Furthermore, DLA officials told us the warehousing program is working as intended. These officials said they believed this because contractors in the pilot program have requested extensions of their support contracts, and one contractor has entered into multiple support contracts for warehousing services. According to DLA officials, DOD has also benefited from the program because it collects additional revenue from the contractors to provide these warehousing services.

However, DOD did not report any challenges cited to us by stakeholders. Two contractor personnel told us that they were unaware of DOD's report but spoke to DOD officials on the positive aspects of the program. According to an Army official, DOD officials did not reach out to them regarding how the support contract may be affecting the primary contract. When we spoke to the contractor personnel and the Army official, they cited challenges associated with timing the start and end dates of the

<sup>31</sup>Section 883(f) required DOD to describe in its report how support contracts affected meeting the requirements of primary contracts.

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primary and support contract, as well as the type of contracts used for these services. Specifically,

- According to contractor personnel, the primary and support contract should start and end at the same time so that rates for services, which can change over time, are consistent. Under the support contract, which started a few years after the primary contract, the government charged the contractor a higher rate for warehousing services than the contractor charged under the primary contract. In order to mitigate this issue, contractor personnel told us they wanted to add an escalation rate, an increase, to the rate in the primary contract.
- According to the Army official, in another set of contracts, the primary contract started 3 years before the relevant support contract. When the support contract began, most of the requirements of the primary contract had already been met, including services for warehousing. In addition, the primary contract was a firm-fixed price contract—where DOD negotiated prices up front, including the cost of warehousing services. This meant the cost of the primary contract did not decrease as a result of the support contract. The Army official told us that they are currently negotiating a new primary contract, which is expected to start by the end of the calendar year. This primary contract will not include the costs of warehousing because the support contract will account for this cost, which will help mitigate this challenge. The Army official told us that the new primary contract may also help DOD determine how the support contract affects contractors meeting the requirements of the primary contract.

In addition, in our review of information provided by DOD related to several of the primary contracts to determine whether they were affected by the support contracts in any way, we found that the information did not include specific content on warehousing services. According to DLA and military service officials, warehousing services were included as part of the overall contract costs and not itemized as separate costs for the primary contracts.

DLA officials said that they did not assess how support contracts affected meeting the requirements of the primary contracts because they did not have guidance about how to do so. As required by Section 883, DOD prepared implementation guidance that included the policy and procedures for DLA to enter into support contracts to provide warehousing services to weapon systems contractors. However, the guidance did not address how to assess the effects the support contracts



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had on the primary contracts.<sup>32</sup> *Standards for Internal Control in the Federal Government* calls for management to design control activities to achieve objectives and respond to risks and to implement those control activities through policies.<sup>33</sup> These policies could include guidance for DOD to assess how support contracts affected meeting the requirements of the primary contracts.

Without developing appropriate guidance to assess the extent to which support contracts may affect the primary contracts, including citing challenges by the stakeholders, DOD may not have the sufficiently reliable and complete information that it needs to inform departmental and congressional decisions about the effectiveness of the warehousing pilot program. Moreover, without DOD conducting the assessment and reporting the results, DOD may be unable to provide Congress the information needed to determine whether to expand the pilot program or make it permanent.

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## Conclusions

DOD, including DLA, operates a large network of about 4,000 warehouses with 602.4 million cubic feet of storage capacity. DOD's warehousing pilot program includes four facilities with approximately 118,000 cubic feet of storage capacity. The pilot program was designed to optimize underutilized warehouse space on military installations and avoid paying for commercial warehousing outside of DOD installations. DOD reported demonstrated efficiencies from its pilot program with weapon systems contractors to co-locate warehousing services with its depot and repair facilities. However, DOD did not conduct a complete assessment of the cost-effectiveness of the program. A complete cost-effectiveness analysis would help ensure that DOD and Congress have the quality cost information they need to evaluate the costs and benefits of the existing pilot program.

The report also did not contain a comprehensive assessment of how support contracts for warehousing affect a contractor's ability to meet the requirements of the primary contracts for weapon systems. An assessment of how the pilot program has affected the primary contracts is

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<sup>32</sup>Department of Defense, Under Secretary of Defense for Acquisition, Technology, and Logistics, *2017 National Defense Authorization Act (NDAA) Section 883 Implementation Guidance* (Nov. 7, 2017). The guidance merely directed DLA to submit to the Office of the Assistant Secretary of Defense for Logistics and Materiel Readiness (or its successor) a report describing how support contracts under the pilot program affected meeting the requirements of primary contracts.

<sup>33</sup>[GAO-14-704G](#).

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needed to inform DOD and Congress about the effectiveness of the pilot program and to make decisions regarding the future of the program.

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## Recommendations for Executive Action

We are making three recommendations to the Secretary of Defense:

The Secretary of Defense should ensure that the Under Secretary of Defense for Acquisition and Sustainment performs a complete cost-effectiveness analysis of the pilot program that follows the guidelines established in DOD Instruction 7041.03. (Recommendation 1)

The Secretary of Defense should ensure that the Under Secretary of Defense for Acquisition and Sustainment develops guidance to assess how support contracts in the warehousing pilot program may affect contractors' ability to meet the requirements of the primary contracts. (Recommendation 2)

The Secretary of Defense should ensure that the Under Secretary of Defense for Acquisition and Sustainment assesses how support contracts in the warehousing pilot program may affect contractors' ability to meet the requirements of the primary contracts and reports its results to Congress. (Recommendation 3)

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## Agency Comments and our Evaluation

We provided a draft of this report to DOD for review and comment. DOD provided a response, reproduced in appendix III, and concurred with our three recommendations. As part of its comments, DOD suggested that we direct recommendations 1 and 3 to the Under Secretary of Defense for Acquisition and Sustainment and to remove the Director, Defense Logistics Agency from these two recommendations. We modified both recommendations to address DOD's suggestion. DOD also provided technical comments, which we incorporated as appropriate.

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We are providing copies of this report to appropriate congressional committees; the Secretary of Defense; the Director, Defense Logistics Agency; Secretaries of the Army, Navy, and Air Force; and other interested parties. The report is also available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-9627 or [maurerd@gao.gov](mailto:maurerd@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on

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the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.

A handwritten signature in black ink that reads "Diana Maurer". The signature is written in a cursive style with a large, stylized 'D' and 'M'.

Diana Maurer  
Director, Defense Capabilities and Management

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# Appendix I: Objectives, Scope and Methodology

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Our report examines the extent to which the Department of Defense (DOD) assessed (1) the cost-effectiveness of the pilot program and (2) whether the support contracts created under the pilot program affected contractors' ability to meet the requirements of their existing primary contracts.

To address our first objective, we analyzed cost information in DOD's report and reviewed other DLA cost information for its warehousing pilot program. We also interviewed DLA officials regarding the steps they took to analyze and prepare cost-effectiveness information for DOD's report. We compared this information to the elements of a cost-effectiveness analysis as identified in DOD Instruction 7041.03, *Economic Analysis for Decision-making*.<sup>1</sup> We categorized the cost-effectiveness information into three areas: (1) those that substantially addressed the elements; (2) those that partially addressed the elements; or (3) those that did not address the elements.

We determined that DOD's cost-effectiveness information "substantially addressed" an element if the evidence showed that the information addressed most or all aspects of an element. We determined that DOD's cost-effectiveness information "partially addressed" an element if the evidence showed the information addressed some, but not most, of the elements. Finally, we determined that DOD's cost-effectiveness information "did not address" an element if the information showed that DOD took no actions to address this element. A GAO analyst analyzed the DOD cost-effectiveness information and categorized it as "substantially addressed," "partially addressed," or "did not address." A GAO economist reviewed these results. There were no disagreements.

We assessed the documentary and testimonial evidence we collected against DOD guidance as well as *Standards for Internal Control in the*

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<sup>1</sup>DOD Instruction 7041.03 establishes policy, assigns responsibilities, and provides procedures for conducting cost-effective economic analyses to evaluate the costs and benefits of any government decisions to initiate, review, or expand a program or project alternatives under the Office of Management and Budget Circular A-94. DOD Instruction 7041.03, *Economic Analysis for Decision-making* (Sept. 9, 2015) (incorporating change 1, Oct. 2, 2017). The Office of Management and Budget Circular A-94 provides guidance for conducting benefit-cost and cost-effectiveness analyses, which are specific types of economic analyses. Office of Management and Budget, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*, OMB Circular No. A-94 (October 29, 1992).

*Federal Government.*<sup>2</sup> We determined that the information and communication component of internal control was significant to this objective, along with underlying principles that management should use quality information to achieve an organization's objectives.

To address our second objective on the extent to which DOD assessed whether the support contracts created under the pilot program affected contractors' ability to meet the requirements of the primary contracts, we reviewed DOD's report to determine whether DOD included this information in the report. In addition, we reviewed the primary weapon system sustainment contracts and support contracts for warehousing services to determine whether the support contracts affected meeting the requirements of the primary contracts in any way.

We assessed the documentary and testimonial evidence we collected against DOD guidance as well as against the federal standards for internal control.<sup>3</sup> We determined that the control activities component of internal control was significant to this objective, along with the underlying principle that management should design control activities to achieve objectives and respond to risks; and implement those control activities through policies.

To address both objectives, we assessed whether DOD met the statutory requirements in Section 883 of the National Defense Authorization Act for Fiscal Year 2017. Specifically, we reviewed relevant laws, regulations, DOD and DLA guidance, and our prior reports related to DOD warehousing programs. We also analyzed documentation and interviewed current knowledgeable officials from DOD, military services, and contractor organizations involved in DOD's pilot program for weapon systems contractors to gain an understanding of their roles in the warehousing program for weapon systems. For each organization below, we developed detailed questions to inform our discussions and received oral or written responses to our questions from these organizations. The DOD, military services, and contractor organizations included in our review are as follows:

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Department of Defense

- Office of the Under Secretary of Defense for Acquisition & Sustainment

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<sup>2</sup>GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 10, 2014).

<sup>3</sup>[GAO-14-704G](#).

- Office of Legislative and Congressional Oversight
- Assistant Secretary of Defense for Sustainment
  - Office of the Deputy Assistant Secretary of Defense for Logistics
  - Office of the Deputy Assistant Secretary of Defense for Materiel Readiness
- Assistant Secretary of Defense for Acquisition
  - Defense Pricing & Contracting
- Assistant Secretary of Defense for Legislative Affairs
- Office of the Under Secretary of Defense for Comptroller/Chief Financial Officer
  - Program and Budget (Revolving Funds)
- Department of Defense Office of General Counsel
- Office of Cost Assessment and Program Evaluation
  - Data Collection and Cost Estimates
- Defense Logistics Agency
  - Deputy Commander, Land and Maritime
  - Office of Legislative Affairs
  - Acquisition (J7)
  - Distribution
  - Logistics Operations (J3)

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Department of the Navy

- Office of the Deputy Assistant Secretary of the Navy for Policy (Procurement)
- Naval Air Systems Command
- Naval Supply Systems Command Weapon Systems Support
- Navy Fleet Readiness Center, Southwest

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Department of the Army

- Army Contracting Command

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Department of the Air  
Force

- Air Force Materiel Command

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Contractors

- Parker-Hannifin/Parker Aerospace Corporation
- Thales Defense & Security, Inc.

We reported on the cost data from DOD's report to provide context and information on the pilot program, but we did not conduct an independent cost assessment to verify if the figures are accurate because our review focused on DOD's report. We determined that the cost avoidance and cost reduction data is of undetermined reliability but we include this data in our report because they are the official numbers provided in DOD's report. To assess the reliability of the data sources we used to conduct our analyses, we developed specific questions regarding the cost data, interviewed DLA officials, and reviewed documentation that they provided on DLA resources and revenue, and contractors' cost reduction and cost avoidance. We reviewed additional documentation DLA provided in response to our questions regarding the cost data for the warehouse pilot program. DLA officials provided information that included an overview of the data sources, how the information was collected, data quality controls, and perceptions of overall data quality. We reviewed the data and compared it to additional cost documentation which DLA provided to check for consistency. We interviewed DLA officials to obtain clarification and discussed our plans for how we intended to use the data.

We conducted this performance audit from March 2022 to March 2023 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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# Appendix II: Elements for an Economic Analysis

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DOD Instruction 7041.03, *Economic Analysis for Decision-making*, states that a complete economic analysis includes the following seven elements:<sup>1</sup>

1. **Objective.** The statement of the objective should clearly define and quantify (to the extent possible) the function to be accomplished. The statement of the objective should not assume a specific means of achieving the desired result. If such an assumption is made, the statement of the objective undermines the analytical purpose of the analysis by prejudging the result and should be avoided.
2. **Assumptions.** Base economic analysis on facts and data whenever possible. Since the analysis deals with costs and benefits occurring in the future, assumptions must be made to account for the uncertainties.
3. **Alternatives.** All reasonable ways of satisfying the objective must be documented and discussed. The recommendation resulting from the analysis comes from the options evaluated. Careful attention must be given to identifying alternatives.
4. **Costs and Benefits.** The costs and benefits associated with each alternative under consideration should be quantified whenever possible, so they may be included in the economic analysis calculations. When quantification is not possible, the analyst should still attempt to document significant (qualitative) costs and benefits. Minimally, qualitative costs or benefits should be discussed in narrative format.
5. **Comparison of Alternatives.** Compare the costs and benefits of each alternative, including a calculation of the Return on Investment if the analysis is in support of a Major Automated Information System acquisition, and rank them according to net present value.
6. **Sensitivity and Uncertainty Analyses.** The analyst should account for uncertainties in the analysis by testing the sensitivity of the economic analysis results to various factors.
7. **Results and Recommendations.** The economic analysis report should begin with a summary of the analysis (based on the benefits and costs of the alternatives) and an interpretation of the results (to include a recommendation of the preferred alternative). The actual decision is based on qualitative as well as quantitative factors. The results of the analysis, including all calculations and sources of data,

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<sup>1</sup>DOD Instruction 7041.03, *Economic Analysis for Decision-making* (Sept. 9, 2015) (incorporating change 1, Oct. 2, 2017).



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must be documented down to the most basic inputs to provide an auditable and stand-alone document.

# Appendix III: Comments from Department of Defense



SUSTAINMENT

ASSISTANT SECRETARY OF DEFENSE  
3500 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3500

FEB 16 2023

Ms. Diana Maurer  
Director, Defense Capabilities Management  
U.S. Government Accountability Office  
441 G Street, NW  
Falls Church, VA 22046

Dear Ms. Maurer:

This is the Department of Defense (DoD) response to the GAO Draft Report GAO-23-105929, "WEAPON SYSTEMS SUSTAINMENT: DOD Needs to Improve Its Reporting for Warehousing Pilot," dated December 15, 2022 (GAO Code 105929).

Enclosed is DoD's response to the recommendations in this draft report. My point of contact is Mr. John Rausch, Office of the Deputy Assistant Secretary of Defense for Logistics, at 608-799-6465 or [john.t.rausch.civ@mail.mil](mailto:john.t.rausch.civ@mail.mil).

Sincerely,

A handwritten signature in black ink, appearing to read "C. Lowman", is written over the name Christopher J. Lowman.

Christopher J. Lowman

Enclosure:  
As stated

GAO DRAFT REPORT DATED DECEMBER 15, 2022  
GAO-23-105929 (GAO CODE 105929)

“WEAPON SYSTEMS SUSTAINMENT: DOD NEEDS TO IMPROVE ITS REPORTING  
FOR WAREHOUSING PILOT”

DEPARTMENT OF DEFENSE COMMENTS  
TO THE GAO RECOMMENDATION

**RECOMMENDATION 1:** The Secretary of Defense should ensure that the Under Secretary of Defense for Acquisition and Sustainment directs the Director, Defense Logistics Agency, to perform a complete cost-effectiveness analysis of the pilot program that follows the guidelines established in DoD Instruction 7041.03.

**DoD RESPONSE:**<sup>8</sup> The DoD concurs with this recommendation but suggests that the recommendation be restated as: “The Secretary of Defense should ensure that the Under Secretary of Defense for Acquisition and Sustainment performs a complete cost-effectiveness analysis of the pilot program that follows the guidelines established in DoD Instruction 7041.03.”

**RECOMMENDATION 2:** The Secretary of Defense should ensure that the Under Secretary of Defense for Acquisition and Sustainment develops guidance to assess how support contracts in the warehousing pilot program may affect contractors’ ability to meet the requirements of the primary contracts.

**DoD RESPONSE:** The DoD concurs with this recommendation as written.

**RECOMMENDATION 3:** The Secretary of Defense should ensure that the Under Secretary of Defense for Acquisition and Sustainment directs the Director, Defense Logistics Agency to assess how support contracts in the warehousing pilot program may affect contractors’ ability to meet the requirements of the primary contracts and report its results to Congress.

**DoD RESPONSE:** The DoD concurs with this recommendation but suggests that the recommendation be restated as: “The Secretary of Defense should ensure that the Under Secretary of Defense for Acquisition and Sustainment directs the appropriate organizations to assess how support contracts in the warehousing pilot program may affect contractors’ ability to meet the requirements of the primary contracts and report its results to Congress.”

**ADDITIONAL DoD RESPONSE:** On Page 11, Table 1: Recommend updating the current data for the fifth contract that is projected to be awarded in May 2023, due to the one-year extension of the authority to conduct the warehousing pilot program pursuant to Section 819 of the National Defense Authorization Act for Fiscal Year (FY) 2023. This information was not available when the GAO draft report was created.

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**Appendix III: Comments from Department of Defense**

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- Northrop Grumman is the contractor
- Primary Contract Award Date: Projected May 2023
- Signing date: December 2022
- Execution Date: Projected May 2023
- Weapon System: B-1 Bomber Low Observable Array
- Length of Support Contract: 5 years
- Projected Total Cost Paid by Contractor to DLA: \$592,360 (using FY 2023 storage rates)
- Projected Total Contractor Cost Avoidance: ~\$500K
- Location of Support Services: Tinker AFB
- Facilities: 7500 cubic feet of warehouse space

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# Appendix IV: GAO Contact and Staff Acknowledgments

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## GAO Contact

Diana Maurer, 202-512-9627 or [maurerd@gao.gov](mailto:maurerd@gao.gov).

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## Staff Acknowledgments

In addition to the contact listed above, Sally Newman (Assistant Director), Clarine Allen (Analyst in Charge), Nicholas Benne, Juliee Conde-Medina, Cori Ingram, David Jones, Courtney LaFountain, Michael Silver, and Lillian Moyano Yob made key contributions to this report.

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# Related GAO Products

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*Defense Management: DOD Should Collect More Stakeholder Input and Performance Data on Its Congressional Reporting Process.*

[GAO-22-105183](#). Washington, D.C.: February 10, 2022.

*Federal Property: GSA Guidance Needed to Help Agencies Identify Unneeded Property in Warehouses.* [GAO-20-228](#). Washington, D.C.: December 20, 2019.

*Supply Chain Management: DOD Could More Efficiently Use Its Distribution Centers.* [GAO-17-449](#). Washington, D.C.: June 21, 2017.

*Defense Inventory: Further Analysis and Enhanced Metrics Could Improve Service Supply and Depot Operations.* [GAO-16-450](#). Washington, D.C.: June 9, 2016.

*Federal Real Property: Strategic Focus Needed to Help Manage Vast and Diverse Warehouse Portfolio.* [GAO-15-41](#). Washington, D.C.: November 12, 2014.

*Defense Inventory: Actions Needed to Improve the Defense Logistics Agency's Inventory Management.* [GAO-14-495](#). Washington, D.C.: June 19, 2014.

*Defense Inventory: Defense Logistics Agency Needs to Expand on Efforts to More Effectively Manage Spare Parts.* [GAO-10-469](#). Washington, D.C.: May 11, 2010.

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