

CBO

Long-Term Implications of the 2021 Future Years Defense Program



At a Glance

As part of the President's budget request, the Department of Defense (DoD) develops a plan called the Future Years Defense Program (FYDP) that reflects DoD's expectations about its programs and costs over the next five years. In this report, the Congressional Budget Office analyzes DoD's plans for 2021 through 2025 as presented in the 2021 FYDP and projects how those plans would affect defense costs through 2035.

- In his proposed budget, the President requested a total of \$706 billion for DoD in fiscal year 2021—4 percent less than was appropriated in 2020 after removing the effects of inflation. Of that total, \$637 billion is designated for the base budget, which is intended to fund normal, peacetime activities. The remaining \$69 billion is designated for emergency activities and overseas contingency operations (OCO)—that is, temporary, war-related activities, such as operations in Afghanistan and elsewhere.
- About 70 percent of the OCO funding for 2021 is designated for base-budget and enduring activities (for example, regular maintenance activities that support overseas operations and are likely to continue regardless of the size of the forces deployed overseas). Designating appropriations in that way makes the request compliant with the funding caps set by the Bipartisan Budget Act of 2019 (Public Law 116-37). For 2022 through 2025, when those caps will no longer be in effect, DoD plans to request funding for those activities in the base budget.
- According to estimates provided in the 2021 FYDP, total funding would be relatively flat through 2025, averaging about \$707 billion per year in 2021 dollars. The relative amounts allocated for day-to-day operations, the acquisition (including development and procurement) of new weapons, and upkeep of infrastructure would also remain nearly unchanged over the FYDP period.
- On the basis of DoD's cost estimates, CBO projects that the inflation-adjusted cost of DoD's plans would increase by 10 percent in the 10 years beyond the FYDP period, to \$781 billion in 2035. Nearly 70 percent of that increase would be for operation and maintenance and for military personnel.
- Using costs that reflect historical experience, CBO projects that the cost of implementing DoD's plans could be about 2 percent higher than DoD estimates over the FYDP period and about 3 percent higher than CBO projected using DoD's estimates over the full 15-year period, 2021 to 2035.



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Unless this report indicates otherwise, all years referred to are federal fiscal years, which run from October 1 to September 30 and are designated by the calendar year in which they end.

Dollar amounts are expressed in 2021 dollars. To remove the effects of inflation, the Congressional Budget Office adjusted amounts with its projections of the gross domestic product price index as of the date the Administration submitted its budget request for 2021. Those projections are published in *The Budget and Economic Outlook: 2020 to 2030* (January 2020), which is available on CBO's website (www.cbo.gov/publication/56020).

In this report, “cost” refers to total obligational authority (TOA), a financial measure used by the Department of Defense (DoD) to identify the funding available for its programs. TOA differs from budget authority most notably in its adjustment for the timing of rescissions and lapses of prior-year budget authority. In recent years, the difference between TOA and discretionary budget authority in DoD's budget request for the coming year has generally been \$1 billion or less.

Numbers in the text and tables may not add up to totals because of rounding.

Previous editions of this report, which CBO publishes annually, are available on CBO's website (<https://go.usa.gov/xEnE6>).

The photographs in the foreground on the cover show the following (clockwise from top left): A Boeing Delta IV Heavy launch vehicle lifts off from Launch Complex 37 at Cape Canaveral Air Force Station, Florida (Carleton Bailie, courtesy of the U.S. Air Force); Major Paul Lopez flies an F-22 Raptor at the 2019 Chicago Air and Water Show (Second Lieutenant Samuel Eckholm, courtesy of the U.S. Air Force); U.S. Army soldiers fire an M777 Howitzer at the National Training Center in Fort Irwin, California (specialist Kamryn Guthrie, courtesy of the U.S. Army); and the U.S.S. *Iwo Jima* (courtesy of the U.S. Navy). The background image on the cover is © SkillUp, Frontpage/Shutterstock.com.



Long-Term Implications of the 2021 Future Years Defense Program

Summary

In most years, the Department of Defense (DoD) produces a five-year plan, called the Future Years Defense Program (FYDP), that is associated with the budget it submits to the Congress. The 2021 FYDP, issued in March 2020, comprises DoD's request for appropriations in 2021 and a series of planned budgets for 2022 through 2025. This report describes the Congressional Budget Office's analysis of the FYDP and summarizes DoD's expectations about the costs of its plans for 2021 through 2025. Because decisions made in the near term can have consequences for the defense budget in the longer term, CBO projected the costs of the 2021 plan through 2035.

What Are DoD's Budget Plans Under the 2021 FYDP?

The proposed budget for DoD in 2021 totals \$706 billion, about 4 percent less than was appropriated in 2020 after removing the effects of inflation. Of that total, \$637 billion is designated for the base budget, which is intended to fund normal, peacetime activities, such as day-to-day military and civilian operations and the development and procurement of weapon systems. The remaining \$69 billion is designated for overseas contingency operations (OCO)—a funding category intended for temporary, war-related activities, such as operations in Afghanistan and elsewhere. Of the \$69 billion requested for OCO, however, only \$20.5 billion would be for direct war costs; \$32.5 billion would be for enduring activities (such as other military missions that are part of the United States' long-term global presence), and \$16.0 billion would be for base-budget costs. The allocation between base and OCO funding for 2021 is structured to comply with the statutory caps on discretionary spending, which do not limit OCO funding.¹

1. Those caps were set by the Budget Control Act of 2011 (Public Law 112-25) as amended by the Bipartisan Budget Act of 2019 (P.L. 116-37).

For the remaining four years of the FYDP, DoD indicated it would request about the same amount of total funding in real terms (that is, after adjusting for the effects of inflation) as it had in 2021: an average of \$707 billion per year. Within DoD's total budget, the relative amounts allocated for day-to-day operations, the acquisition (including development and procurement) of new weapons, and upkeep of infrastructure would also remain nearly unchanged over the FYDP period. However, because the limits on discretionary funding are set to expire in 2021, the enduring and base-budget activities currently covered by OCO funding would be included in the base budget for the following years. As a result, much less funding would be designated for OCO—about \$19 billion in 2022 and 2023 and \$9 billion in 2024 and 2025.

What Is the Potential Cost of DoD's Plans for 2026 Through 2035?

Unlike DoD's estimates for the cost of its plans over the FYDP period, CBO's projections indicate that costs after 2025 would increase faster than inflation. In CBO's estimation, those costs would reach \$781 billion (in 2021 dollars) by 2035, an increase of 10 percent in real terms over the 10 years following 2025 (see Figure 1).

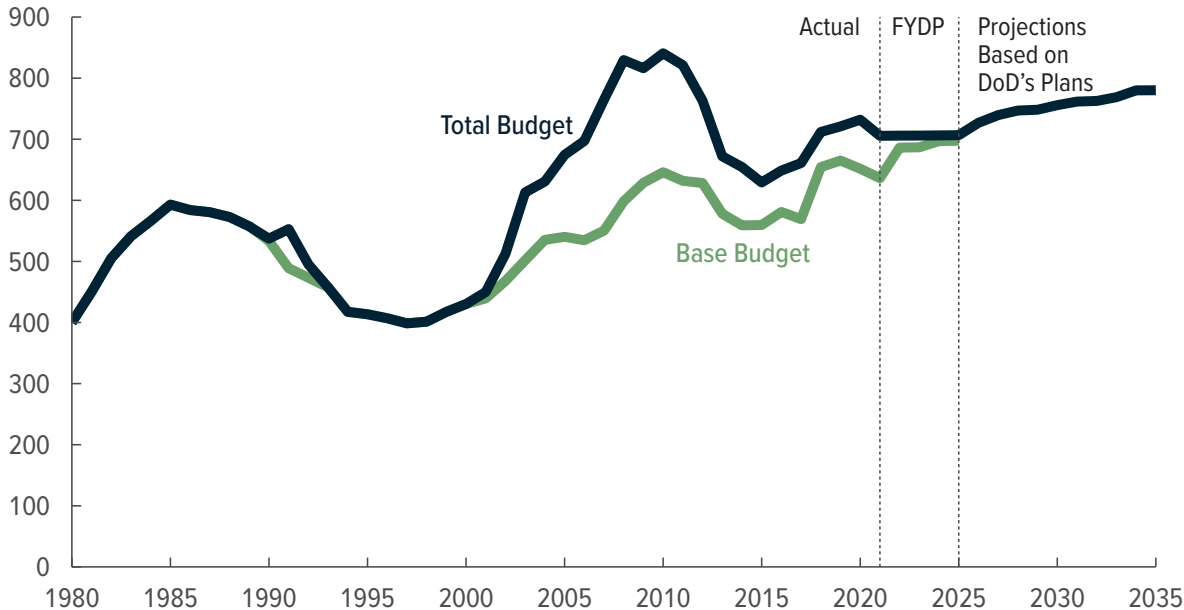
The key factors that would lead to increases in DoD's costs are as follows:

- The costs of compensation for military personnel and of operation and maintenance (O&M) are projected to increase at historical rates, growing faster than inflation; and
- The costs for the acquisition of weapon systems are projected to increase to meet the department's modernization objectives and maintain the current size of the force.

Figure 1.

Historical Funding for DoD's Activities and Projected Costs Under the 2021 FYDP

Billions of 2021 Dollars



Source: Congressional Budget Office.

Before 2026, funding for the total budget (which includes funding designated for OCO or as an emergency requirement) and funding for the base budget are shown separately. DoD indicated that about 70 percent of the amount it designated for OCO in 2021 would be shifted to the base budget starting in 2022 when the caps under the Budget Control Act of 2011 will have expired. DoD characterized the small amounts designated for OCO from 2022 through 2025 as “placeholders” because actual costs will depend on how overseas operations change over time.

DoD = Department of Defense; FYDP = Future Years Defense Program; OCO = overseas contingency operations.

Of the \$74 billion increase in annual costs that CBO projects between 2025 and 2035, about 20 percent is for military personnel costs, 50 percent is for O&M costs, and nearly 30 percent is for costs to develop and purchase weapon systems.

What Are Uncertainties in the Cost of DoD's Plans Through 2035?

In many areas of DoD's budget, costs have historically grown more rapidly than they are projected to grow in the 2021 FYDP. For example, DoD projects that the costs of military health care will grow more slowly over the FYDP period than CBO's forecast of the cost of health care in the general economy would indicate. Similarly, DoD has frequently underestimated costs for O&M and the acquisition of weapon systems.

To assess the possible effects of such factors, CBO prepared an alternative projection of the costs of

implementing DoD's 2020 plans using estimates that better reflect the patterns of growth in DoD's costs over the past several decades. According to those estimates, total costs from 2021 through 2025 would be \$77 billion (or 2 percent) higher than DoD indicated in the 2021 FYDP, and total costs from 2021 through 2035 would be \$376 billion (or 3 percent) higher than CBO projected using DoD's estimates (see Table 1).

More generally, DoD's projections of costs in the FYDP and CBO's projections through 2035 are estimates of the long-term costs of executing DoD's plans as they stood when DoD was preparing its 2021 budget and supporting documents. However, international events, Congressional decisions, and other factors could change those plans. For example, policymakers may seek to offset costs that have been incurred in responding to the 2020 coronavirus pandemic or to increase funding to prepare for future pandemics by decreasing military

Table 1.

Increases in DoD’s Costs Under Alternative Policies and Projection Methods

	Total Increase (Billions of 2021 dollars)	
	2021–2025	2021–2035
Areas in Which Different Policies Could Be Adopted		
Military pay increases at the rate of the ECI starting in 2022 ^a	-3	-13
Civilian pay increases at the rate of the ECI starting in 2022	11	38
Areas in Which CBO Used Different Projection Methods		
MHS costs grow at the projected rate of health care costs in the general economy starting in 2022	6	30
Other O&M costs (adjusted for the size of the force) experience cost growth starting in 2022 consistent with cost growth since 1980 ^b	26	143
Major acquisition programs experience cost growth consistent with cost growth since 1970	37	177
Total	77	376
Memorandum:		
Projected total cost of DoD’s plans using DoD’s estimates for 2020 through 2025	3,532	11,109
Projected total cost of DoD’s plans using CBO’s alternative policies and methods	3,609	11,485

Source: Congressional Budget Office.

DoD = Department of Defense; ECI = employment cost index for wages and salaries of workers in the private sector, as defined by the Bureau of Labor Statistics; FYDP = Future Years Defense Program; MHS = Military Health System; O&M = operation and maintenance.

a. DoD projected that military pay would increase at a slower rate from 2022 through 2025 than the ECI growth that was projected at the time the 2021 FYDP was prepared. However, that growth in military pay is higher than current projections of the ECI that incorporate the economic impact of the coronavirus pandemic. Military pay raises that follow the new, slower growth in the ECI would decrease costs relative to the 2021 FYDP.

b. “Other O&M” is the sum of the O&M and revolving and management fund appropriation titles minus costs for civilian compensation and the MHS.

budgets. Furthermore, even if DoD’s plans generally remained unchanged, many program-level policies that underlie DoD’s projections of its costs might not come to pass. For those reasons, CBO’s projections should not be viewed as predictions of future funding for DoD; rather, the projections are estimates of the costs of executing the department’s 2020 plans under the premise that those plans would not change.

Costs for contingency operations are even more uncertain than costs in the base budget because they depend on how ongoing conflicts evolve and whether new conflicts will arise. As outlined in the 2021 FYDP, DoD plans for operations in the Middle East to subside, reducing its projected direct war costs by roughly half by 2025. CBO used DoD’s projection for that year (\$9 billion) for the cost of OCO in each year between 2026 and 2035.

Costs of the 2021 Future Years Defense Program Through 2035

CBO analyzed the costs of DoD’s plans over the FYDP period—2021 through 2025—and projected the costs of those plans over an additional 10 years, through 2035. In most previous assessments of the long-term implications of DoD’s plans, CBO focused on the department’s base budget because it is the portion of the budget relevant to long-term plans. However, in its 2019 analysis of the 2020 defense budget, CBO began including both the base and OCO budgets in its assessment. Beginning in 2022, the cost of most of the activities that have been designated as OCO in 2021 will be included in the base budget, and the rest—direct war costs for 2021 and what DoD refers to as “placeholder” estimates of direct war costs for 2022 to 2025—makes up only a very small fraction (between 1 percent and 3 percent) of planned budgets. Because those remaining OCO amounts are

small, including them reflects DoD's expectation of continued conflict but does not distort CBO's projections of long-term costs that are better reflected by base budgets.

How CBO Projected the Costs of DoD's Plans Beyond the FYDP Period

CBO's analysis of the long-term costs of DoD's plans is based on the estimates DoD provided in the 2021 FYDP for the years 2021 through 2025. Using DoD's estimates as a starting point, CBO projected the costs of DoD's plans for the subsequent 10 years, 2026 through 2035. CBO incorporated its estimates of how the economy will change in the future in its projections of those costs.² To align DoD's funding with those economic projections, CBO divided it into three categories (which are described below in the section "Categories of Funding" and discussed in greater detail later in the report).

Projection Methods. CBO's projections for 2026 through 2035 are based as much as possible on policies underlying DoD's estimate of costs in the 2021 FYDP, current laws regarding the compensation of military personnel, and the longer-term acquisition plans that DoD publishes in Selected Acquisition Reports and other official documents, such as the Navy's 30-year shipbuilding plan.³ For the parts of DoD's budget in which such policies and cost estimates have not been specified, CBO generally based its projections on trends in prices and compensation anticipated for the broader economy (see Table 2).⁴

CBO's projections also incorporate the assumption that the size and composition of the military and the number of civilian personnel would remain unchanged after 2025, unless DoD has specified otherwise. For example,

because DoD plans to increase the number of Navy ships over the coming decades, CBO's projections incorporate an increase in personnel to support that larger fleet. Additionally, CBO's projections reflect the assumption that for any major weapon system expected to reach the end of its service life before 2035 but for which DoD has not yet announced a replacement, DoD would develop and purchase a generally similar but more modern system.

Dollar amounts in this report are expressed in 2021 dollars. To remove the effects of inflation over the 15-year projection period, CBO adjusted estimates of DoD's costs with the projections of the gross domestic product (GDP) price index that CBO published in January 2020, shortly before the FYDP was released. Although CBO has since changed those projections of inflation to account for economic disruptions caused by the pandemic, CBO used the prepandemic projections in this analysis because they better reflect the cost trends that DoD incorporated into the FYDP, especially over the FYDP period, and because they allow for easier comparison of CBO's projections with the FYDP. If the amounts were adjusted using the current projections of the GDP price index, they would be slightly higher than those adjusted with the January inflation projections, but the difference is never larger than 1 percent over the FYDP period and decreases thereafter.

Categories of Funding. Nearly all of DoD's funding is provided in appropriations under seven public law titles: military personnel; operation and maintenance; procurement; research, development, test, and evaluation (RDT&E); military construction; family housing; and revolving and management funds. For simplicity, CBO organized DoD's funding into three broad categories according to the types of activities that are funded:

- *Operation and support (O&S)*, which includes operation and maintenance, military personnel, and revolving and management funds;
- *Acquisition*, which includes procurement and RDT&E; and
- *Infrastructure*, which includes military construction and family housing.

CBO's estimates of the costs of O&S and infrastructure over the 2026–2035 period are based primarily on the

2. See Congressional Budget Office, "10-Year Economic Projections" (January 2020), www.cbo.gov/about/products/budget-economic-data#4. Data are arranged by fiscal year in Table 3 in that file. In this report, constant growth was assumed after 2030 to extend those economic projections by five years, to 2035.

3. Because DoD has not published plans for many minor programs extending beyond the FYDP period, CBO estimated costs for those programs on the basis of historical correlations between funding for major and minor programs.

4. For a more detailed discussion of CBO's methods for projecting costs for the individual components of DoD's budget, see Congressional Budget Office, *An Analysis of the Obama Administration's Final Future Years Defense Program* (April 2017), www.cbo.gov/publication/52450.

Table 2.

Methods Used by CBO to Project the Cost of DoD’s Plans Beyond the 2021 FYDP

Area of DoD’s Budget	CBO’s Methods
Military Pay	After 2025, the rate of growth matches CBO’s projection of the growth rate for the ECI
Civilian Pay	After 2025, the rate of growth matches CBO’s projection of the growth rate for the ECI
Military Health System	After 2025, projected costs track with CBO’s projection of the growth rate for health care spending in the broader economy
Operation and Maintenance (Excluding civilian pay and the MHS)	After 2025, projected costs grow at the historical average rate for operation and maintenance
Acquisition	Projected costs are estimated on a program-by-program basis using information from DoD or CBO’s estimates, which are based on previous programs
Military Construction	After 2025, projected costs equal the historical average and thereafter grow at CBO’s projection of the growth rate for construction costs in the broader economy

Source: Congressional Budget Office.

This table does not show the methods that CBO used to produce alternative cost estimates. Those alternatives are based on historical trends and show how DoD’s costs might differ from the estimates provided in the 2021 FYDP.

DoD = Department of Defense; ECI = employment cost index for wages and salaries of workers in the private sector, as defined by the Bureau of Labor Statistics; FYDP = Future Years Defense Program; MHS = Military Health System.

size of the force, historical cost growth, and economic factors such as inflation as measured by the employment cost index (ECI) for wages and salaries of workers in the private sector and the GDP index. CBO’s projections of acquisition costs are based primarily on how spending in a number of separate DoD acquisition programs is expected to change over the projection period. About two-thirds of the acquisition costs in CBO’s projections are based on either DoD’s long-term program plans or on CBO’s expectations about the way other major components of DoD’s acquisition portfolio might unfold over the coming years. The other third of acquisition costs—primarily for smaller programs—are based on historical relationships between major acquisition efforts and the total acquisition budget.

DoD’s 2021 FYDP includes estimates of OCO costs for 2022 through 2025 that are not allocated by appropriation title. For this analysis, CBO allocated the costs of OCO to individual titles in 2022 and the ensuing years using the same proportions by appropriation title that

DoD used in its OCO request for 2021.⁵ CBO used DoD’s projection for 2025—\$9 billion—for the cost of OCO each year for 2026 through 2035.

DoD’s Estimates of Costs in the 2021 FYDP

The proposed budget for DoD in 2021 is about 4 percent smaller than the amount appropriated for 2020, after removing the effects of inflation. That reduction includes a \$2 billion (or less than 1 percent) decrease for O&S, a \$14 billion (or about 5 percent) decrease for acquisition, and an \$11 billion (or nearly 60 percent) decrease in for infrastructure. However, more than half of the decrease in infrastructure funding would occur because more than \$6 billion was appropriated in 2020 to rebuild facilities damaged by Hurricanes Florence and Michael.

5. For a more detailed discussion of CBO’s methods for distributing OCO funding among the appropriation titles in DoD’s budget, see Congressional Budget Office, *Long-Term Implications of the 2019 Future Years Defense Program* (February 2019), Box 1, p. 4, www.cbo.gov/publication/54948.

The annual cost of DoD's plans would be nearly constant over the five-year FYDP period, increasing by only 0.2 percent—from \$705.5 billion in 2021 to \$707.1 billion in 2025 (in 2021 dollars). Although DoD's total funding request would remain roughly constant according to the FYDP, funding designated for the base budget would increase by about 8 percent from 2021 to 2022 once the overall limits on discretionary funding expire. That increase reflects DoD's plans to request that funds for certain base-budget and enduring activities—which have been included in the OCO budget—be moved to the base budget starting in 2022.⁶

Under DoD's plans the costs for O&S and acquisition would also change little through 2025. Costs for O&S, which account for slightly less than two-thirds of DoD's budget, would average \$455 billion over the FYDP period, and costs for acquisition, which account for about one third, would average \$242 billion (after factoring in DoD's planned OCO-to-base shift).⁷ Funding for infrastructure costs would vary from a low of \$8 billion to a high of \$11 billion, accounting for between 1.2 percent and 1.6 percent of DoD's total costs over the FYDP period.

CBO's Projections of DoD's Costs for 2026 Through 2035

On the basis of DoD's estimates in the FYDP, CBO projects that the costs of the department's plans over the 10 years following 2025 would increase at an average annual rate of 1 percent (in real terms), rising from DoD's estimate of \$707 billion in 2025—the end of the FYDP period—to \$781 billion in 2035 (see Figure 1 on page 2). The average annual increase from 2021 through 2035 would be 0.7 percent. Although those rates would lead to substantial increases over the long term, they are lower than the estimates of 3 percent to 5 percent real growth per year that DoD has

put forth as necessary to support the Administration's defense strategy.⁸

Costs for O&S, acquisition, and infrastructure would all contribute to the increase in the cost of DoD's plans after 2025 (see Figure 2). Costs for O&S would rise steadily, from DoD's estimate of \$455 billion in 2025 to \$505 billion in 2035—an increase of 11 percent. Likewise, costs for acquisition would increase by about 9 percent over that period—from DoD's estimate of \$242 billion in 2025 to \$263 billion in 2035—but they would exhibit more year-to-year variation. Most of the increase in acquisition costs would occur in the first few years beyond the FYDP period. In CBO's projections, costs for infrastructure increase steadily after the FYDP period, from DoD's estimate of \$10 billion in 2025 to \$12 billion in 2035.

CBO's Estimates of DoD's Costs Under Alternative Assumptions

DoD's estimates through 2025 incorporate some assumptions that yield lower costs than would be anticipated on the basis of an analysis of historical trends. For example, the Congress has often provided a larger military pay raise than DoD requested, and weapon systems have often cost more than DoD estimated. To assess the effect of such factors, CBO estimated how DoD's costs would change if the projection methods CBO used for O&S for 2026 through 2035 were also applied to the FYDP period and if costs to acquire weapon systems were to grow as they have in the past.

Using those alternative policies and projection methods increased the estimated cost of DoD's plans by \$77 billion (or about 2 percent) over the FYDP period. It also increased CBO's estimate of the cost of DoD's plans over the full 15-year period, 2021 through 2035, by \$376 billion (or about 3 percent). Nearly half of the increase over the 15-year period was in acquisition costs (see Table 1 on page 3).

Projected Costs of Operation and Support

Funding for O&S is the sum of the appropriations for three public law titles: military personnel, O&M, and revolving and management funds. (In its analysis, CBO includes the relatively small amount that DoD requested

6. CBO classifies OCO spending as “enduring” if it supports operations or activities that would occur whether or not the United States was at war or if it is used to procure facilities or equipment that would continue to need funding whether or not the United States was at war.

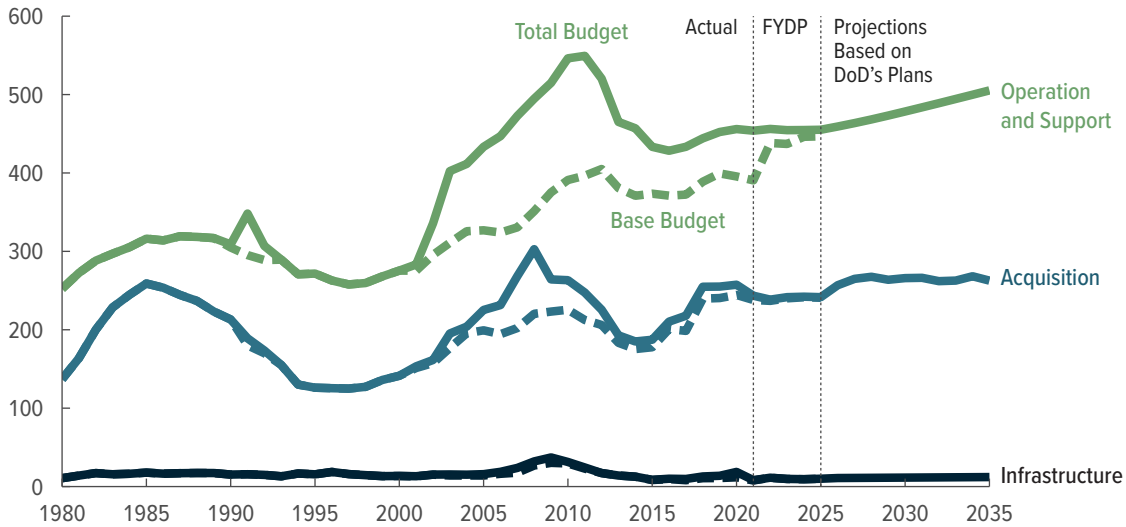
7. For a discussion of the OCO-to-base shift, see Congressional Budget Office, *Long-Term Implications of the 2019 Future Years Defense Program* (February 2019), p. 1, www.cbo.gov/publication/54948.

8. For example, see Paul McLeary, “Flatline: SecDef Esper Says DoD Budgets Must Grow 3–5%” (February 6, 2020), <https://tinyurl.com/y3y374vv>.

Figure 2.

DoD’s Costs for Operation and Support, Acquisition, and Infrastructure Under the 2021 FYDP

Billions of 2021 Dollars



Source: Congressional Budget Office.

Funding for operation and support is the sum of the appropriations for military personnel, operation and maintenance, and revolving and management funds. Acquisition funding is the sum of the appropriations for procurement and for research, development, test, and evaluation. Infrastructure funding is the sum of the appropriations for military construction and family housing.

Before 2026, funding for the total budget (which includes funding designated for OCO or as an emergency requirement) and funding for the base budget are shown separately.

DoD = Department of Defense; FYDP = Future Years Defense Program; OCO = overseas contingency operations.

for revolving and management funds with the O&M appropriation because those two titles involve similar activities.) O&S funding can be separated into three general types of costs, regardless of which public law title funds them:

- *Compensation*, which consists of pay and cash benefits for military personnel and DoD’s civilian employees as well as the costs of retirement benefits. Those costs fall under the appropriations for military personnel and O&M (for civilian employees).
- The *Military Health System (MHS)*, which provides medical care for military personnel, military retirees, and their families. Those costs also fall under the appropriations for military personnel and O&M.
- *Other O&M*, which covers costs such as those for base operations, fuel, depot maintenance, and spare parts.

Those costs fall entirely under the appropriation for O&M.

CBO based its projection of DoD’s O&S costs on the anticipated growth in those three categories of costs. A sum of the costs in CBO’s three categories would exceed total O&S funding because the cost of compensation for military and civilian personnel who work in the military health system would be counted twice: once in the compensation category and again in the MHS category. When discussing the categories in isolation, CBO included those costs in both categories to present a more complete picture of each category’s costs, but CBO corrected for that double-counting in its presentation of overall O&S costs.

O&S Costs in the 2021 FYDP

Nearly two-thirds of DoD’s total budget request for 2021—\$454 billion—was for O&S: \$163 billion for military personnel and \$290 billion for O&M. Adjusted

for inflation, the amount requested for O&S in 2021 is \$2 billion less than the amount enacted for 2020—a decrease of less than 1 percent. (O&S costs in CBO’s analysis are expressed in terms of the total budget, including both base-budget funding and funding designated for OCO.) In real terms, O&S costs would vary only slightly over the next four years, ending the FYDP period less than \$2 billion higher than they would be in 2021.

Although total O&S funding would be only \$1.3 billion higher in 2025 than it would be in 2021, military personnel costs would be \$4.8 billion higher as a result of real increases in compensation costs and an increase of 16,000 in the number of service members (from 2.149 million to 2.165 million). That growth in military personnel costs would be offset by what DoD expects to be a \$3.5 billion decrease in O&M costs, which would mark a departure from a decades-long trend of real growth in O&M costs per service member. The number of civilian employees—809,000 in 2021—would not change over the FYDP period.⁹

Compensation. Within the O&S category, total funding for compensation would increase by 2.0 percent (in real terms) over the FYDP period (see Table 3). In its 2021 budget, DoD requested a 3.0 percent pay raise for military personnel, which equals the increase in the ECI (a measure of the cost of compensating workers that is reported by the Bureau of Labor Statistics) that was expected when the FYDP was prepared. DoD requested a 1.0 percent pay raise for civilian employees in 2021, which, in real terms, would result in a decline in civilian pay for that year. DoD’s FYDP reflects the assumption that from 2022 through 2025, pay for military personnel would increase by 2.6 percent per year and pay for civilian personnel would increase by 2.1 percent per year in current dollars. Both of those amounts are below the average annual increase in the ECI of 3.4 percent that CBO projected at the time the FYDP was released.¹⁰ After adjusting for inflation, DoD’s costs for military

compensation would increase by a total of 3.1 percent from 2021 through 2025, and costs for civilian compensation would be nearly unchanged.

The economic disruption caused by the coronavirus pandemic is expected to result in slower growth in the ECI over the FYDP period, however. CBO now projects average annual growth in the ECI of 2.4 percent for 2021 through 2025, which is lower than DoD’s plans for military pay raises but higher than its plans for civilian pay raises. The potential effect of that change is discussed later in the report in the section “Differences Between DoD’s O&S Estimates and Historical Experience.”

Military Health System. Costs for the MHS would remain virtually constant (in real terms) during the FYDP period under DoD’s projection. Those costs consist of military personnel costs (for uniformed health care providers), direct care costs (for government health care facilities, including civilian employees), purchased care costs (for private-sector providers), pharmaceutical costs, and TRICARE for Life accrual payments (for health care for military retirees and their families). The FYDP reflects DoD’s plans to shift health care for service members’ families and retirees away from military medical facilities to private providers. The result would be a decrease in the number of government medical personnel (military and civilian) assigned to the MHS and a corresponding decrease in costs for military personnel and direct care. In DoD’s projections, decreases in military personnel and direct care costs are offset by increased costs for purchased care, pharmaceuticals, and TRICARE for Life accrual payments. The projection of constant health care costs over the next five years stands in contrast to the economywide growth in medical costs that CBO projects for that period.

Other O&M. DoD estimated that total O&M spending would decrease by about 1.2 percent (in real terms) over the FYDP period. Because civilian compensation would be unchanged and the O&M portion of MHS funding would increase over that time, the remainder of O&M spending, which CBO categorizes as “Other O&M,” would shrink by about 2 percent over the FYDP period. Other O&M funds a wide range of activities such as training, maintenance of equipment, operation of military bases, fuel, and contractor support. The cost reduction DoD anticipates in Other O&M over the FYDP period can be attributed to its expectation that

9. CBO estimates that about 85 percent of DoD civilians are compensated with O&M and revolving and management funds. The remainder are compensated with funds appropriated for procurement, RDT&E, military construction, or family housing.

10. See Congressional Budget Office, “10-Year Economic Projections” (January 2020), www.cbo.gov/about/products/budget-economic-data#4.

Table 3.

DoD’s Operation and Support Costs, by Appropriation Title and as Categorized by CBO

Billions of 2021 Dollars

	President’s Budget Request, 2021	FYDP, 2025	CBO’s Projections Based on DoD’s Plans, 2035
Appropriation Title			
Military Personnel			
Military compensation	155	159	169
TRICARE for Life accrual payments	8	9	13
Total	163	168	182
Operation and Maintenance ^a			
Civilian compensation	81	81	89
Operation and maintenance in the MHS	26	27	33
Other operation and maintenance	183	179	201
Total	290	287	323
Total Appropriations for Operation and Support	454	455	505
CBO’s Categories			
Compensation ^b			
Military personnel	163	168	182
Civilian personnel ^c	81	81	89
Total	244	249	271
Military Health System ^d			
Military pay in the MHS	9	8	8
Civilian pay in the MHS	6	6	7
Operation and maintenance in the MHS	26	27	33
TRICARE for Life accrual payments	8	9	13
Total	50	50	61
Other Operation and Maintenance	183	179	201

Source: Congressional Budget Office.

Funding for operation and support is the sum of the appropriations for military personnel, operation and maintenance, and revolving and management funds.

DoD = Department of Defense; FYDP = Future Years Defense Program; MHS = Military Health System.

- a. CBO included the relatively small amount in DoD’s budget for revolving and management funds with the operations and maintenance appropriation because those two titles involve similar activities.
- b. Compensation consists of pay, cash benefits, and accrual payments for retirement benefits. For civilians, it also includes DoD’s contributions for health insurance.
- c. These amounts do not include compensation for civilian personnel funded from accounts other than operation and maintenance.
- d. These amounts do not include MHS spending from accounts other than operation and support.

OCO costs for direct war requirements will be about 60 percent lower in 2025 than in 2021 (after adjusting for inflation). DoD may also expect that it will be able to achieve some improvements in efficiency and to eliminate some programs, as specified in plans that it has

developed.¹¹ Achieving such reductions runs counter to historical trends, however.

11. For example, see Chief Management Officer, Department of Defense, *Fiscal Year (FY) 2020 Annual Performance Plan and FY 2018 Annual Performance Report* (February 2019), <https://go.usa.gov/xmSnZ> (PDF, 10 MB).

Projections of O&S Costs for 2026 Through 2035

In CBO's projections beyond the 2021 FYDP period, O&S costs rise steadily after 2025, from DoD's estimate of \$455 billion in that year to \$505 billion in 2035, which is an average annual rate of 1.0 percent above inflation (see Figure 2 on page 7). Compensation, MHS, and Other O&M costs would all increase.

Compensation. CBO based its projections of compensation costs beyond 2025 on current law, which sets military pay raises equal to the growth in the ECI unless the Congress or the President acts to provide different amounts. According to CBO's long-term economic projections, the ECI is expected to increase at an average annual rate of 1.1 percentage points above economywide inflation. Other elements of military compensation, including housing allowances and subsistence allowances, would also increase faster than inflation, resulting in an overall real increase of \$10 billion in military compensation by 2035. Increases in accrual charges for retiree health care would add an additional \$4 billion to military personnel costs by 2035. CBO projects that civilian pay would also rise with the ECI, maintaining parity with military pay increases and resulting in an increase of \$8 billion in real terms by 2035. In total, compensation would increase by 10 percent (in real terms) after 2025, from \$249 billion to \$271 billion (see Table 3 on page 9, lower panel).

Military Health System. In its projections for the Military Health System, CBO incorporated costs that would grow at the same rate as the costs of health care in the general economy, except for the portion of MHS costs designated for the compensation of military personnel and federal civilians (which CBO assumed would grow at the rate of the ECI, as discussed above). Combined, those changes would yield an average annual increase in MHS costs of about 2 percent above economywide inflation. At that rate, costs for the MHS would grow by 22 percent from 2025 to 2035, from \$50 billion to about \$61 billion (see Figure 3).

Other O&M. In its projection for Other O&M, CBO estimated that costs would increase faster than inflation, consistent with long-standing trends.¹² Between 1980 and 2020, DoD's Other O&M costs have more

than doubled in real terms after adjusting for changes in the size of the military, increasing annually by about \$1,600 per active-duty service member. Because it is not practical to make individual estimates of the costs of the thousands of activities that Other O&M comprises, CBO's projections reflect overall growth in those costs that is consistent with that historical trend. That results in an average annual increase of 1.2 percent in real terms after 2025, which would cause annual costs for Other O&M to increase by \$22 billion (or 12 percent) by 2035.

Uncertainty in Projections of O&S Costs

CBO's projections are not meant to predict future budgets. They are extrapolations of DoD's estimates in the FYDP, made on the premise that the primary aspects of the current defense plan would remain unchanged. But DoD's plans could change for many reasons. Moreover, projections of economic factors that affect DoD's costs—such as changes in the ECI or health care costs—are rarely perfect, which could also cause DoD's actual costs to differ from CBO's projections. For example, the coronavirus pandemic is expected to slow the growth in the ECI relative to earlier projections.

Differences Between DoD's O&S Estimates and Historical Experience

DoD's actual costs could differ from its estimated costs not only because of the previously described uncertainties but also because several of DoD's estimates about O&S costs over the FYDP period are counter to recent trends. Those estimates result in lower projected rates of growth over the FYDP period in all three categories of O&S costs when compared with CBO's estimates for 2026 through 2035.

- DoD planned for a 1 percent pay raise for its civilian workers in 2021 (in contrast to the 3 percent pay raise requested for military personnel), but civilian raises have usually been equal to or only slightly smaller than those for military personnel.¹³
- DoD projected that O&M costs for the MHS would increase at less than half the rate that CBO projects for health care costs in the economy as a whole.

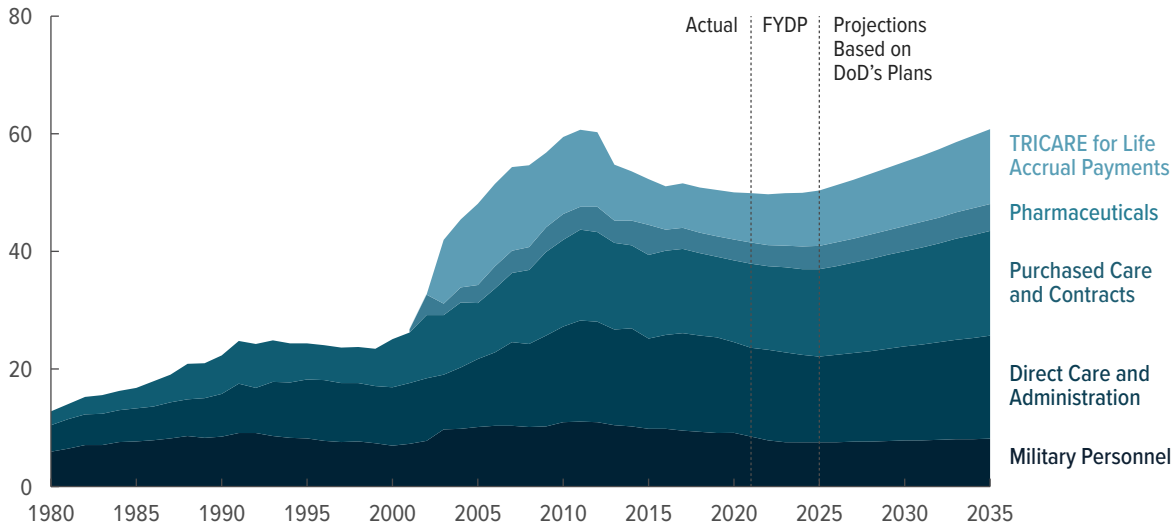
12. For a more detailed discussion of CBO's approach to analyzing "Other O&M" costs, see Congressional Budget Office, *An Analysis of the Obama Administration's Final Future Years Defense Program* (April 2017), www.cbo.gov/publication/52450.

13. For example, although the 2020 budget request included no pay raise for civilians, an overall average pay increase of 3.1 percent for civilian federal employees was provided in 2020. Military personnel received the same percentage raise.

Figure 3.

Costs of the Military Health System Under the 2021 FYDP

Billions of 2021 Dollars



Source: Congressional Budget Office.

Before 2001, pharmaceutical costs were not identified separately but were embedded in the costs of two categories: “Purchased Care and Contracts” and “Direct Care and Administration.” In 2001 and later years, most pharmaceutical costs are identified separately, but some are embedded in the category “TRICARE for Life Accrual Payments.”

DoD = Department of Defense; FYDP = Future Years Defense Program.

- DoD planned for Other O&M costs to fall by about 2 percent (in real terms) over the FYDP period even though those costs (adjusted for changes in the size of the force) have increased for decades despite DoD’s many efforts over the years to improve efficiency and eliminate unnecessary activities. Although some decrease can be attributed to the reduction in direct war costs funded with OCO appropriations, CBO estimates that if Other O&M costs grew at their historical rate, they would exceed the amounts projected in the FYDP.

In addition, DoD’s plans called for military pay to increase more slowly than the average annual increase in the ECI that was projected at the time the FYDP was prepared, even though military pay raises have matched or exceeded growth in the ECI in 20 of the past 30 years. However, the economic effects of the coronavirus pandemic have resulted in a slower projected growth in the ECI than DoD included in the FYDP—an average of 2.3 percent per year instead of 2.6 percent per year from 2022 through 2025. If military pay raises match the new

ECI projections, DoD’s costs for military compensation would be slightly lower than anticipated in the FYDP (see Table 1 on page 3). Despite the decrease in projected growth in the ECI, civilian raises matching the smaller ECI raises for the military would still be larger than the civilian raises anticipated in the FYDP.

Even with slower than anticipated growth in the ECI, DoD’s overall costs for O&S would be higher if the growth rates in other parts of O&S over the FYDP period matched the historical growth rates CBO used in its projections of defense costs beyond the FYDP period instead of those incorporated in DoD’s plan. Cumulative O&S costs would be \$40 billion (or about 2 percent) higher than DoD’s plan from 2021 to 2025 and \$198 billion (or about 3 percent) higher than CBO’s extension of the FYDP from 2021 to 2035 (see Table 1 on page 3, first four rows). CBO estimates that 13 percent of the difference in the cumulative costs for 2021 through 2035 would be attributable to compensation, 15 percent to the MHS, and 72 percent to Other O&M.

Projected Costs of Acquisition

Acquisition funding comprises appropriations for procurement and RDT&E. That funding is used to develop and buy new weapon systems and other major equipment, to upgrade the capabilities or extend the service life of existing weapon systems, and to support research on future technologies.

CBO used two approaches to project acquisition costs. For major programs involving the acquisition of new weapon systems or upgrades to existing systems, CBO projected costs and schedules on a program-by-program basis. For smaller programs and general research-and-development activities, CBO made aggregate projections on the basis of policies either stated or implied in DoD's planning documents or on the basis of historical relationships between total acquisition funding and the funding for major programs. (CBO's projections for programs did not account for growth in the costs above DoD's estimates; the agency explored the effect that historical cost growth in acquisition programs could have in alternative projections discussed below.)

CBO based its program-by-program projections not only on the 2021 FYDP but also on detailed plans, such as Selected Acquisition Reports, that the services have issued for some major systems (for example, the Air Force's new trainer aircraft). For other major systems (for example, a new armed reconnaissance aircraft for the Army), CBO based its estimates on more general descriptions the services have provided about schedules and costs for development and procurement. For still other systems (for instance, future fighters that the Navy and Air Force are considering putting into service in the 2030s), there are no detailed schedules or cost estimates, but their acquisition can be anticipated if DoD is to maintain the current size of the force when today's weapons reach the end of their service lives. In those cases, CBO based its cost estimates on the premise that the services would replace retiring weapon systems with similar but more technologically advanced ones.

Acquisition Costs in the 2021 FYDP

In DoD's budget request for 2021, \$243 billion (or about one-third of its budget request) was for acquisition: \$137 billion for procurement and \$107 billion for RDT&E. The amount requested in the budget for acquisition in 2021 is 5 percent less than the amount appropriated for 2020 (after adjusting for inflation). Acquisition costs under the 2021 FYDP would remain

fairly steady, averaging \$241 billion annually for 2022 through 2025 after adjusting for inflation. After a small dip in 2022, costs for procurement would increase steadily to \$150 billion at the end of the FYDP period (see Figure 4). That amount is 8 percent higher than the inflation-adjusted average of total procurement costs (base budget and OCO) over the past 20 years. The increase in procurement costs would be offset by a 14 percent decrease in RDT&E costs over the FYDP period, to \$92 billion in 2025. Despite that decrease, however, costs for RDT&E would still be substantial compared with past costs: Annual funding for RDT&E has averaged about \$73 billion since 1980, after adjusting for inflation. Costs for RDT&E in the 2021 FYDP would also be higher than average funding since 2000 (\$86 billion).

The Army's acquisition costs would decrease by about 8 percent, from \$38 billion in 2021 to \$35 billion in 2025 (see Figure 5 on page 14). Procurement would increase by 2 percent as the Army began purchasing new weapons for conflicts against technologically advanced adversaries. Under the Army's plans, annual costs for combat vehicles would nearly double—from \$3.7 billion in 2021 to \$7.3 billion in 2025—as purchases of Armored Multi-Purpose Vehicles (AMPVs) increased and purchases of replacements for Bradley fighting vehicles began. Costs for aircraft procurement would decrease by 26 percent over the FYDP period as current programs were completed, and missile procurement costs would be 3 percent lower in 2025 than in 2021. Funding for RDT&E would decrease by 27 percent over the FYDP period as the development of new aircraft, offensive missiles, and missile defense systems was completed and production was begun.

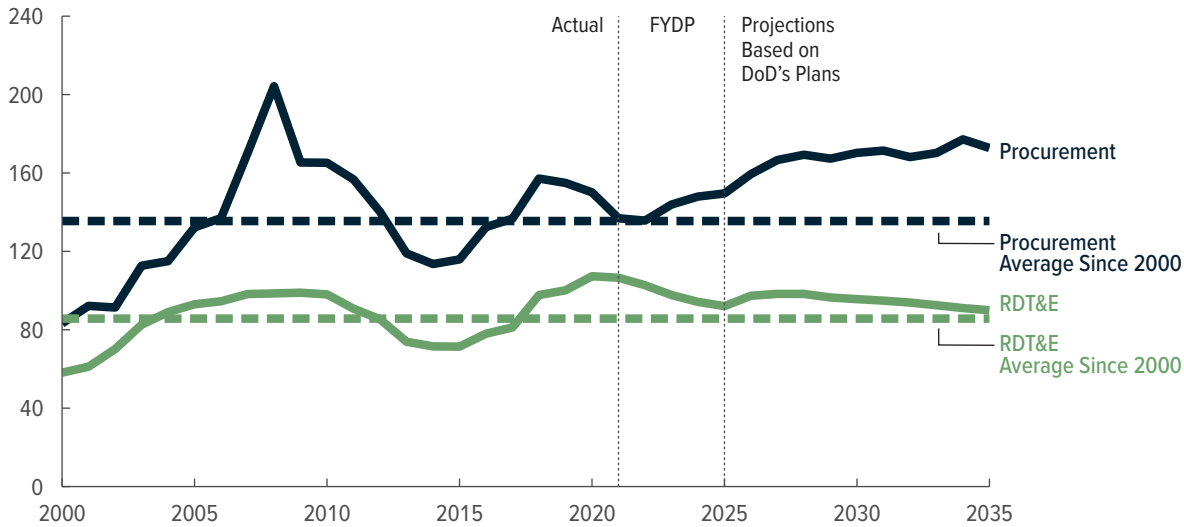
Acquisition costs for the Department of the Navy (including the Marine Corps) would increase by about 2 percent, from slightly less than \$79 billion in 2021 to just over \$80 billion in 2025. Procurement would *increase* by nearly \$6 billion (or 10 percent) and RDT&E would *decrease* by \$4 billion (or 18 percent) over that time. Most of the increase in procurement costs would be for ships as the Navy continued its efforts to increase the size of the fleet. Purchases of new long-range missiles for use against technologically advanced adversaries would also contribute to increased procurement costs.

The Department of the Air Force (including the newly established Space Force) would also have increased

Figure 4.

DoD’s Acquisition Costs Under the 2021 FYDP, by Appropriation Title

Billions of 2021 Dollars



Source: Congressional Budget Office.

Acquisition funding is the sum of the appropriations for procurement and RDT&E.

DoD = Department of Defense; FYDP = Future Years Defense Program; RDT&E = research, development, test, and evaluation.

costs for procurement and decreased costs for RDT&E from 2021 to 2025. Procurement costs would increase by about 20 percent, from \$27 billion to \$33 billion. Almost all of that increase would be for aircraft (in particular, the new advanced trainer and the B-21 bomber) and space systems. The Air Force’s costs for RDT&E would decrease from \$37 billion to \$32 billion, leaving its total acquisition costs nearly unchanged. The Space Force has taken on space-related activities previously conducted by the Air Force and is expected to eventually take on some or all of DoD’s space-related activities, but because the details of those changes are not yet clear and would probably have little effect on overall acquisition costs, CBO did not incorporate them into this analysis. (For example, in CBO’s projections, costs for future Navy communications satellites remain with the Navy, although developing and fielding those satellites may eventually become the responsibility of the Space Force.)

The Air Force’s acquisition costs described above do not include costs for classified activities performed outside of the Air Force that are funded through the service’s procurement and RDT&E accounts. Those costs, which totaled \$32 billion in the 2021 budget request, are

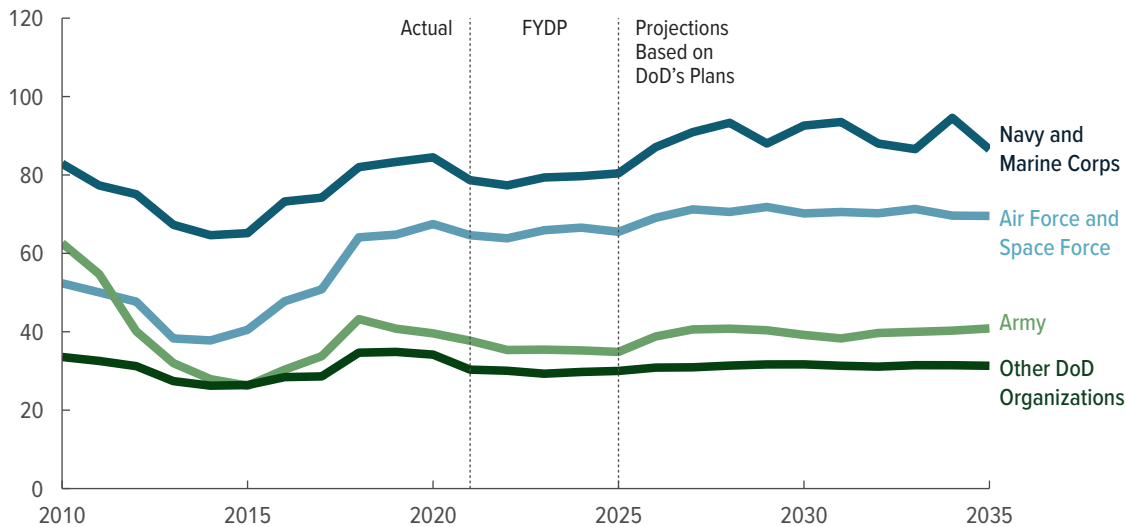
included when CBO refers to total acquisition costs for DoD, however. CBO estimated that those costs would decrease slightly (in real terms) over the FYDP period.

DoD’s budget also includes defensewide acquisition funding, which is allocated to defense agencies other than the three military departments. Under the 2021 FYDP, acquisition costs for defensewide programs would be nearly constant, averaging \$30 billion from 2021 through 2025. The agencies funded by defensewide appropriations carry out activities in conjunction with the services—for example, performing advanced research, developing missile defenses (the Missile Defense Agency), developing some of DoD’s space systems (the recently established Space Development Agency), overseeing special operations, and managing financial and information systems. Costs for the Missile Defense Agency would average slightly less than 30 percent of defensewide costs over the FYDP period. Costs for the Space Development Agency (SDA) would increase from about \$290 million in 2021 to \$1.8 billion in 2025 as that organization works toward fielding new constellations of satellites. Although in the future the SDA may

Figure 5.

DoD's Acquisition Costs Under the 2021 FYDP, by Military Department

Billions of 2021 Dollars



Source: Congressional Budget Office.

Acquisition funding is the sum of the appropriations for procurement and RDT&E.

Funding shown for the Air Force does not include approximately \$30 billion each year for classified activities not carried out by that service.

DoD = Department of Defense; FYDP = Future Years Defense Program; RDT&E = research, development, test, and evaluation.

become part of the Space Force, for this analysis CBO included its costs in defensewide acquisition.

Projections of Acquisition Costs for 2026 Through 2035

In CBO's projections, DoD's acquisition costs rise sharply in the years immediately after the FYDP period, from \$242 billion in 2025 to \$268 billion in 2028 (see Figure 2 on page 7). Costs would vary slightly from year to year thereafter, averaging \$265 billion from 2029 through 2035. Costs for procurement would be \$24 billion (or 16 percent) higher in 2035 than in 2025. Costs for RDT&E would increase from \$92 billion in 2025 to \$98 billion in 2027 and then steadily decrease to \$90 billion in 2035.

For the Army, acquisition costs would increase rapidly in the first two years after the FYDP period, growing from \$35 billion in 2025 to \$41 billion 2027 (see Figure 5). Most of that increase would be attributable to procurement costs, which would rise from \$26 billion to \$31 billion over that period. Procurement costs would vary slightly from year to year after 2027, averaging

\$31 billion per year through 2035. RDT&E costs would remain nearly unchanged, averaging about \$9 billion per year.

The Army has defined six broad acquisition priorities that encompass nearly all of its weapon systems. Those objectives are to acquire new long-range precision weapons, a new armored combat vehicle, a new vertical-lift aircraft, an improved communications network for combat units, improved air-and-missile defense systems, and improved infantry weapons and other equipment for soldiers. Although the Army has not defined the specific systems that would be acquired, CBO's projections beyond the FYDP period include notional programs to satisfy those objectives. Most of the increase in projected procurement costs after 2025 would be for new armored vehicles and aircraft. The projections also reflect the Army's plans to purchase new, long-range missiles and to continue improvements to its air-and-missile defense systems and digital network systems.

For the Navy (including the Marine Corps), CBO estimates that acquisition costs would increase by 8 percent

in the first year after the FYDP period, from \$80 billion in 2025 to \$87 billion in 2026. The Navy's acquisition costs would reach \$93 billion in 2028 and then range from \$87 billion to \$93 billion through 2035. Costs for shipbuilding would account for most of the increase as the Navy continued to increase the size of its fleet and to replace two of its most expensive classes of ships: aircraft carriers and ballistic missile submarines.¹⁴ Average annual shipbuilding costs for 2026 through 2035 would be about \$9 billion (or 41 percent) higher than the average over the FYDP period. Average annual costs for missiles would be 35 percent higher after the FYDP period, CBO estimates, as the Navy began purchasing three new long-range weapons: a conventional hypersonic missile, a surface-launched nuclear cruise missile, and a submarine-launched ballistic missile to replace the Trident D5 nuclear missile. Aircraft-related costs would increase slightly after the FYDP period, but then decrease sharply after 2031 as current programs to acquire new aircraft (such as the F-35 Joint Strike Fighter and the CH-53K helicopter) and to modify existing aircraft were completed. The cost of the Navy's RDT&E, which would drop by almost 20 percent over the FYDP period, would return to its 2021 amount (\$21 billion) by 2028 and average about that amount over the last seven years of the projection period.

For the Air Force (including the Space Force), CBO projects that acquisition costs would increase by 9 percent in the first two years beyond the FYDP period, from \$66 billion in 2025 to \$72 billion in 2027. The Air Force's acquisition costs would remain fairly steady thereafter, averaging about \$71 billion per year through 2035. Those amounts do not include the classified activities that are funded through the Air Force's acquisition budget but not carried out by the service. CBO projected that those "pass-through" amounts would grow slowly after 2025, averaging \$33 billion per year through 2035. The growth in the Air Force's costs would result primarily from increased procurement of several new weapon systems—including fighters (the F-35A), bombers (the B-21), supersonic trainers (the Advanced Pilot Training aircraft), nuclear cruise missiles (the Long-Range Standoff Weapon), and intercontinental ballistic missiles (the Ground-Based Strategic Deterrent)—and

from costs to develop new systems for achieving air superiority that would be fielded in the 2030s. Costs for space systems would average \$5.2 billion per year in the 10 years beyond the FYDP period, almost 60 percent more than the average during the FYDP period.

In CBO's projections, defensewide acquisition costs vary between \$31 billion and \$32 billion per year from 2025 to 2035. Missile defense costs would increase by 12 percent in the first four years beyond the FYDP period but almost return to the 2025 amount at the end of the projection period. Other costs, such as those for other defense agencies, would increase very slowly (by about 0.5 percent annually in real terms).

Uncertainty in Projections of Acquisition Costs

Like the projections of O&S costs, the projections of DoD's acquisition costs are subject to considerable uncertainty. One major source of uncertainty is the possibility that DoD's plans and their associated costs would change. Changes in acquisition plans, sometimes substantial, can result from a variety of factors. For example, the funding constraints imposed by the Budget Control Act led DoD to curtail the acquisition spending it had planned in earlier FYDPs. Changes in the military capability of perceived adversaries can also motivate changes in DoD's acquisition plans. For example, DoD had no plans to purchase thousands of mine-resistant vehicles until they became necessary in the face of roadside bombs in Iraq, nor did it have programs to counter hypersonic weapons until China began testing such weapons several years ago.

Uncertainty about the 2021 FYDP is heightened because DoD is in the early stages of shifting its emphasis from counterinsurgency operations to more technologically advanced warfare. For example, the Army has yet to define detailed acquisition plans (such as might be found in a Selected Acquisition Report) for many of its acquisition priorities, which are focused on improving capabilities against adversaries with modern militaries. The shift in DoD's emphasis is also reflected in the relatively large amounts of funding requested for RDT&E in the early years of the 2021 FYDP period and in the Administration's plans to rapidly field advanced (but not yet well-defined) systems, such as hypersonic cruise missiles, unmanned ships and underwater vehicles, and integrated networks of independent sensors for battle-field reconnaissance.

14. See Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2020 Shipbuilding Plan* (October 2019), www.cbo.gov/publication/55685, and *How CBO Estimates the Cost of New Ships* (April 2018), www.cbo.gov/publication/53785.

Plans for the fielding of future space systems are particularly uncertain. The SDA has outlined plans for several satellite constellations that would provide an array of capabilities including communications, missile defense, surveillance and reconnaissance, and tracking of ground targets. If pursued, those plans are likely to be costly. However, they might enable DoD to lower costs in other areas. For example, the Air Force might be able to retire some of its reconnaissance aircraft. Because of the great uncertainties, CBO did not include those systems in its projections.

Differences Between DoD's Acquisition Estimates and Historical Experience

Growth in the costs of weapons programs could also cause acquisition costs to differ from the projections discussed above. According to analyses by the RAND Corporation and the Institute for Defense Analyses (IDA), DoD has tended to underestimate the costs of its major weapons programs.¹⁵ Actual costs could be higher than early estimates for many reasons, including the following:

- Underestimates of costs in DoD's initial plans;
- Changes in economic factors, such as the costs of labor and raw materials;
- Changes in performance requirements, which can result in the need for costly design changes during development;
- Lower-than-anticipated annual funding, which can increase total costs by disrupting established plans and schedules and by stretching programs (and their associated overhead costs) over longer periods; and
- Unanticipated technological challenges posed by new systems.

15. See Mark V. Arena and others, *Historical Cost Growth of Completed Weapon System Programs*, TR-343-AF (RAND Corporation, 2006), www.rand.org/pubs/technical_reports/TR343.html; David L. McNicol and Linda Wu, *Evidence on the Effect of DoD Acquisition Policy and Process on Cost Growth of Major Defense Acquisition Programs*, IDA Paper P-5126 (Institute for Defense Analyses, September 2014), <https://apps.dtic.mil/dtic/tr/fulltext/u2/a609472.pdf> (826 KB); and Obaid Younossi and others, *Is Weapon System Cost Growth Increasing? A Quantitative Assessment of Completed and Ongoing Programs*, MG-588-AF (RAND Corporation, 2007), www.rand.org/pubs/monographs/MG588.html.

CBO's projections of long-term acquisition costs is based on DoD's estimates of development and procurement costs and on the number of units to be purchased per year and in total, as specified in DoD's long-range plans. To illustrate how growth in the costs of acquisition programs might affect the total costs of DoD's 2021 budget plans, however, CBO prepared alternative estimates using historical patterns of growth in DoD's costs. For those estimates, CBO applied cost-growth factors derived from RAND's and IDA's research to the portfolio of large weapons programs, excluding those for Navy ships, in the 2021 FYDP.¹⁶ For Navy ships, CBO used detailed estimates prepared for its annual analysis of the Navy's shipbuilding plans. Using the resulting cost estimates instead of DoD's cost estimates raises total projected acquisition costs by 3.5 percent over the FYDP period and by 6.1 percent over the 2026–2035 period. That equates to an additional \$7 billion per year, on average, over the 2021–2025 period and an additional \$14 billion per year, on average, for 2026 through 2035 (see Table 1 on page 3, fifth row). Because uncertainty about costs is greater in the more distant future, the potential increases are larger for the years beyond the FYDP period.

Projected Costs of Infrastructure

The budget for infrastructure comprises appropriations for military construction and family housing, which provide funds for building and renovating DoD's facilities. Appropriations for military construction cover facilities such as buildings, runways, and piers used by the military. Appropriations for family housing cover a portion of the housing on military installations.¹⁷

Infrastructure Costs in the 2021 FYDP

DoD requested a total of \$8.2 billion for infrastructure in 2021, which is about 35 percent less than the amount

16. For details about how CBO applies those cost-growth factors, see Congressional Budget Office, *An Analysis of the Obama Administration's Final Future Years Defense Program* (April 2017), pp. 47–50, www.cbo.gov/publication/52450.

17. Since the enactment of the Military Housing Privatization Initiative in 1996, the costs to operate and maintain most military housing have been transferred to private companies. In the budget, costs for that privatized housing have been shifted to housing allowances in the military personnel appropriation. See the Office of the Assistant Secretary of Defense for Sustainment, "Facilities Management—Military Housing Privatization Initiative" (accessed September 1, 2020), www.acq.osd.mil/eie/FIM/Housing/Housing_index.html.

appropriated in 2020, excluding the \$6.4 billion (in 2021 dollars) in disaster relief funding that was appropriated to rebuild facilities damaged by Hurricanes Florence and Michael. Requested infrastructure funding makes up 1.2 percent of DoD's total request in 2021. The base-budget portion of DoD's request for infrastructure totaled \$7.8 billion—\$6.5 billion for military construction and \$1.4 billion for family housing.

Under the 2021 FYDP, annual infrastructure costs would jump to \$11.4 billion in 2022 and then vary between \$9.4 billion and \$10.1 billion through 2025. Military construction costs would increase by 44 percent from 2021 to 2022, from \$6.8 billion to \$9.9 billion, then average \$8.3 billion per year over the final three years of the FYDP period. Appropriations for family housing would rise by about 8 percent in 2022 and then remain nearly constant through 2025.

Projections of Infrastructure Costs for 2026 Through 2035

In CBO's projections, infrastructure costs in DoD's base budget increase by an average of 1.9 percent per year after the FYDP period, reaching \$12.1 billion in 2035. Those increases are based on CBO's projection of real growth in the cost of construction projects in the general economy.

Uncertainty in Projections of Infrastructure Costs

The primary source of uncertainty in current projections of infrastructure costs is whether the Congress will authorize a new round of Base Realignment and Closure (BRAC)—a process in which DoD closes and consolidates bases to streamline its allocation of resources and cut costs. The last round of BRAC began in 2005, but the Congress has not supported DoD's efforts to implement a new round since then.¹⁸ Infrastructure costs would change if a new round of BRAC was authorized, but the magnitude and timing of those changes cannot be estimated with confidence.

18. The Congress prohibited spending on an additional round of BRAC in the National Defense Authorization Act of 2020 (P.L. 116–92, December 2019).



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About This Document

The Congressional Budget Office prepared this report at the request of the Chairman and Ranking Member of the Senate Committee on the Budget. In keeping with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

David Arthur and F. Matthew Woodward coordinated the preparation of this report with guidance from David Mosher and Edward G. Keating. Elizabeth Bass, Michael Bennett, Eric Labs, and Adam Talaber contributed to the analysis. Eric Labs fact-checked the manuscript.

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CBO continually seeks feedback to make its work as useful as possible. Please send any comments to communications@cbo.gov.

Phillip L. Swagel
Director
September 2020