

The Navy's 2023 Shipbuilding Plan and the Future of Expeditionary Warfare Operations


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Relevant Reports by CBO

Congressional Budget Office
OCTOBER 2020



The Cost of the Navy's New Frigate

On April 30, 2020, the Navy awarded Fluor Daniel Maritime Marine a contract to build the Navy's new surface combatant, a guided missile frigate (designated as FFG(X)). The contract guarantees that Fluor Daniel will build the lead ship.

Several factors support the Navy's estimate:

- The FFG(X) is based on a design that has been in production for nearly 20 years.

CBO estimates that the Navy's new surface combatant ships, in Office estimates all of these cost:

- CBO estimates that the Navy's new surface combatant ships would be \$1.5 billion, plus 40 percent.
- The Navy's cost of \$2.7 billion is \$1.2 billion more.
- If the Navy's cost is correct, the FFG(X) cost is 100 percent more than the cost of the Navy's current surface combatant ships.


1. See Section 2.1 of the report.

Notes: All years are in calendar years, unless otherwise noted.

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An Analysis of the Navy's Fiscal Year 2020 Shipbuilding Plan



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Costs of Submarine Maintenance at Public and Private Shipyards




APRIL 2019

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Alternatives for Modernizing the Navy's Sealift Force



OCTOBER 2019

Congressional Budget Office
Nonpartisan Analysis for the U.S. Congress

An Analysis of the Navy's Fiscal Year 2022 Shipbuilding Plan

SEPTEMBER | 2021

In June 2021, the Department of Defense submitted to the Congress the Navy's 30-year shipbuilding plan for fiscal year 2022.¹ The Congressional Budget Office is required by law to analyze that plan and assess its costs. The agency's assessment is the subject of this report. In its 2022 plan, the Navy provided less information than it has in most previous plans. CBO's analysis was limited:

- Fleet Size: The Navy's plan would build 398 ships at a cost of about \$72 billion, or 372 ships at a cost of about \$68 billion today.
- Cost: The Navy's plan would cost \$72 billion, or \$68 billion today.
- Missile Capability: The Navy's plan would launch 100,000 missiles, or 100,000 missiles today.


1. See Department of Defense, "Navy Shipbuilding Plan for Fiscal Year 2022" (June 2021).

Notes: Unless otherwise noted, all numbers are in billions of dollars.

Congressional Budget Office
Nonpartisan Analysis for the U.S. Congress

An Analysis of the Navy's Fiscal Year 2023 Shipbuilding Plan

NOVEMBER | 2022



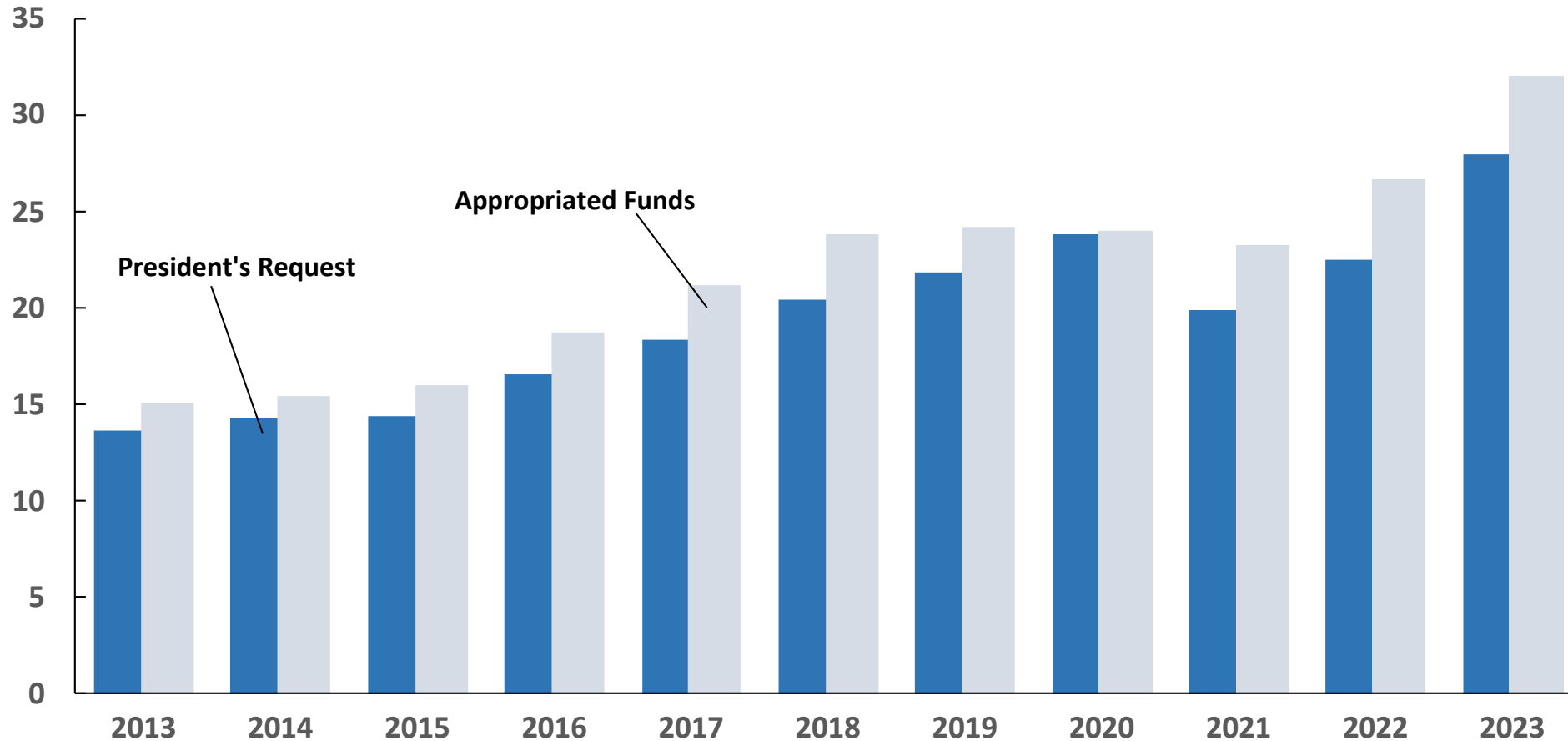
The Navy's 2023 Shipbuilding Plan and the Future of Expeditionary Warfare Operations

- Congressional Support for Shipbuilding
- The Navy's Evolving Force Structure Analysis and Shipbuilding Plans
- CBO's Analysis of the Navy's 2023 Shipbuilding Plan
 - Purchases and Their Effects on Inventory
 - Costs
 - Measures of Capability
- The Amphibious Warfare Force Under the Navy's 2023 Shipbuilding Plan and the 2023 National Defense Authorization Act

Congressional Support for Shipbuilding

Shipbuilding Requests and Appropriations, FY 2013 to FY 2023

Billions of Dollars



The Congress has consistently appropriated more funds for shipbuilding than Administrations have requested.

Congressional Action on Shipbuilding for FY 2023

| | President's Request | HASC | SASC | NDAAs | HAC-D | SAC-D | Omnibus |
|---|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Ship Purchases | | | | | | | |
| Destroyers | 2 | 3 | 2 | 3 | 2 | 3 | 3 |
| Submarines | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Frigates | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Amphibious Ships | 1* | 1 | 1 | 1 | 1 | 1 | 1 |
| Logistics and Support Ships | <u>2</u> | <u>5</u> | <u>2</u> | <u>4</u> | <u>2</u> | <u>4</u> | <u>4</u> |
| Total | 8 | 13 | 8 | 11 | 8 | 11 | 11 |
| Shipbuilding Budgets (Billions of dollars) | | | | | | | |
| New Combat Ships | 23.9 | 27.0 | 24.5 | 26.7 | 23.8 | 27.1 | 26.7 |
| New Logistics and Support Ships | 0.9 | 2.3 | 0.9 | 1.5 | 0.9 | 1.5 | 1.5 |
| Other | <u>3.1</u> | <u>3.3</u> | <u>4.0</u> | <u>4.4</u> | <u>3.0</u> | <u>3.3</u> | <u>3.8</u> |
| Total | 27.9 | 32.7 | 29.3 | 32.6 | 27.8 | 31.9 | 32.0 |
| Amount Above President's Request | | 4.8 | 1.4 | 4.7 | -0.1 | 4.0 | 4.1 |
| Percentage of Increase Above FY 2022 Amounts | 23% | 15% | 17% | 19% | 18% | 19% | 20% |

FY = fiscal year; HAC-D = House Appropriations Committee, Defense Appropriations Subcommittee; HASC = House Armed Services Committee; NDAAs = National Defense Authorization Act for 2023; SAC-D = Senate Appropriations Committee, Defense Appropriations Subcommittee; SASC = Senate Armed Services Committee.

* = The Administration counted an LHA in 2023 in its ship count; however, the Congress authorized that ship in a prior year.

The Navy's Evolving Force Structure Analysis and Shipbuilding Plans



The Navy's Inventory Analysis and Goals, Circa 2018 to 2022

| | 2020 Future Naval Forces Study (December 2020 plan) | 2020 Integrated FSA (Reported in 2023 Plan) | Future Naval Forces Study Future Fleet Architecture (Reported in 2023 Plan) | Navy's 2022 Shipbuilding Plan | Chief of Naval Operations' Navigation Plan 2022 |
|---------------------------------------|---|---|---|-------------------------------|---|
| Aircraft Carriers | 8 to 11 | 12 | 8 to 11 | 9 to 11 | 12 |
| Light Carriers | 0 to 6 | 0 | 0 to 6 | n.a. | 0 |
| Ballistic Missile Submarines | 12 | 12 | 12 | 12 | 12 |
| Attack and Guided Missile Submarines | 72 to 78 | 66 | 58 to 70 | 66 to 72 | 66 |
| Large Surface Combatants | 73 to 88 | 96 | 72 to 80 | 63 to 65 | 96 |
| Small Surface Combatants | 60 to 67 | 56 | 47 to 60 | 40 to 45 | 56 |
| Large/Midsize Amphibious Ships | | | | | |
| Amphibious Assault Ships | 9 to 10 | 10 | 6 to 10 | 8 to 9 | 10 |
| Midsize Amphibious Ships | } 52 to 57 | } 41 | } 30 to 43 | 16 to 19 | 21 |
| Light Amphibious Warships | | | | 24 to 35 | 18 |
| Combat Ships, Subtotal | 286 to 329 | 293 | 233 to 292 | 238 to 268 | 291 |
| Logistics and Support Ships | <u>96 to 117</u> | <u>97</u> | <u>78 to 136</u> | <u>83 to 104</u> | <u>82</u> |
| Total, Battle Force Ships | 382 to 446 | 390 | 337 to 404 | 321 to 372 | 373 |
| Unmanned Surface Vessels | 119 to 166 | 27 | 81 to 153 | 59 to 89 | Unknown |
| Unmanned Undersea Vessels | 24 to 76 | 18 | 18 to 50 | 18 to 51 | Unknown |
| Total, Unmanned Vessels | <u>143 to 242</u> | <u>45</u> | <u>99 to 203</u> | <u>77 to 140</u> | <u>About 150</u> |
| Total, All Ships and Vessels | 525 to 688 | 435 | 440 to 540 | 398 to 512 | About 523 |

CBO's Analysis of the Navy's 2023 Shipbuilding Plan: Purchases and Their Effects on Inventory



The Navy's Five-Year Shipbuilding Plan, 2023 to 2027

| | 2023 | 2024 | 2025 | 2026 | 2027 | Total |
|--|-------------|-------------|-------------|-------------|-------------|--------------|
| Columbia Class Ballistic Missile Submarines | 0 | 1 | 0 | 1 | 1 | 3 |
| Virginia Class Attack Submarines | 2 | 2 | 2 | 2 | 2 | 10 |
| Arleigh Burke Class Destroyers | 2 | 2 | 2 | 2 | 2 | 10 |
| Constellation Class Guided Missile Frigates | 1 | 2 | 1 | 2 | 1 | 7 |
| America Class Amphibious Assault Ships | * | 0 | 0 | 0 | 0 | 0 |
| San Antonio Class Amphibious Transport Docks | 1 | 0 | 0 | 0 | 0 | 1 |
| Light Amphibious Warships | 0 | 0 | 1 | 1 | 2 | 4 |
| John Lewis Class Oilers | 1 | 2 | 1 | 1 | 1 | 6 |
| Next-Generation Logistics Ships | 0 | 0 | 0 | 1 | 1 | 2 |
| Support Ships | 1 | 0 | 2 | 3 | 1 | 7 |
| Total | 8 | 9 | 9 | 13 | 11 | 50 |
| T-ARC Cable Laying Ships | 0 | 1 | 0 | 0 | 0 | 1 |
| Used Sealift Ships | 2 | 2 | 2 | 2 | 2 | 10 |
| Large Unmanned Systems | 0 | 0 | 3 | 4 | 5 | 12 |
| Total, Shipbuilding Costs (Billions of dollars) | 27.9 | 28.9 | 30.9 | 33.0 | 29.9 | 150.6 |

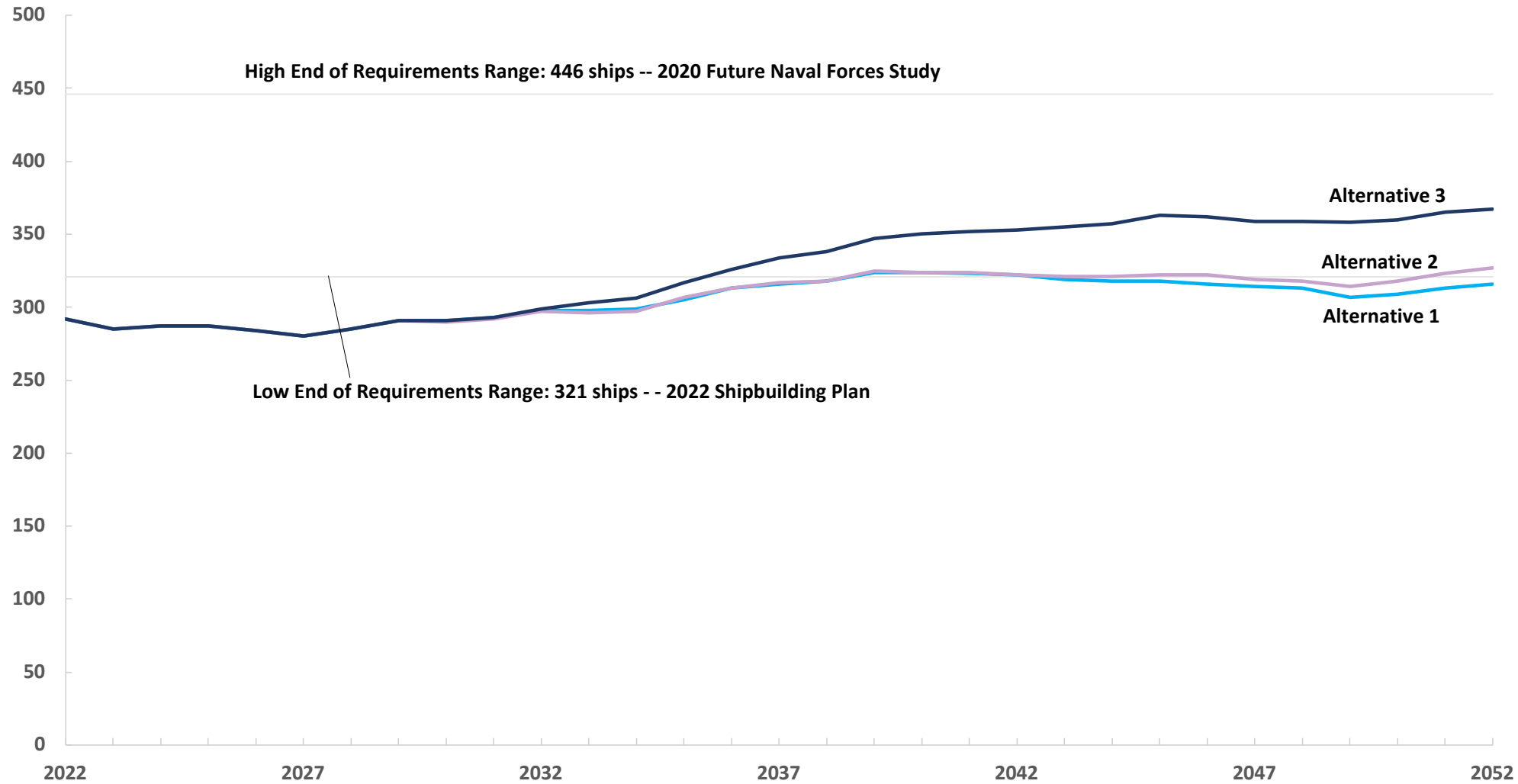
* = The Administration counts an amphibious assault ship as being authorized in 2023, although the Congress authorized that ship in 2021.



Ship Purchases Under the Navy's 2023 Plan

| | Alternative 1 | Alternative 2 | Alternative 3 |
|--|---------------|---------------|---------------|
| Aircraft Carriers | 5 | 5 | 7 |
| Ballistic Missile and Large Payload Submarines | 15 | 17 | 15 |
| Virginia Class Attack Submarines With VPMs | 23 | 33 | 27 |
| Virginia Class Attack Submarines Without VPMs | 0 | 16 | 0 |
| SSN(X)s | 31 | 17 | 33 |
| DDG-51 Flight IIIs | 16 | 18 | 17 |
| DDG(X)s | 38 | 29 | 47 |
| FFG-62 | 17 | 11 | 17 |
| FFG-62 Flight IIs | 35 | 44 | 40 |
| Large and Midsize Amphibious Warfare Ships | 10 | 13 | 14 |
| Light Amphibious Warships | 40 | 34 | 49 |
| Combat Logistics and Support Ships | <u>52</u> | <u>57</u> | <u>74</u> |
| Total | 282 | 294 | 340 |

Battle Force Ships: Requirements and Projections Under the Navy's 2023 Plan

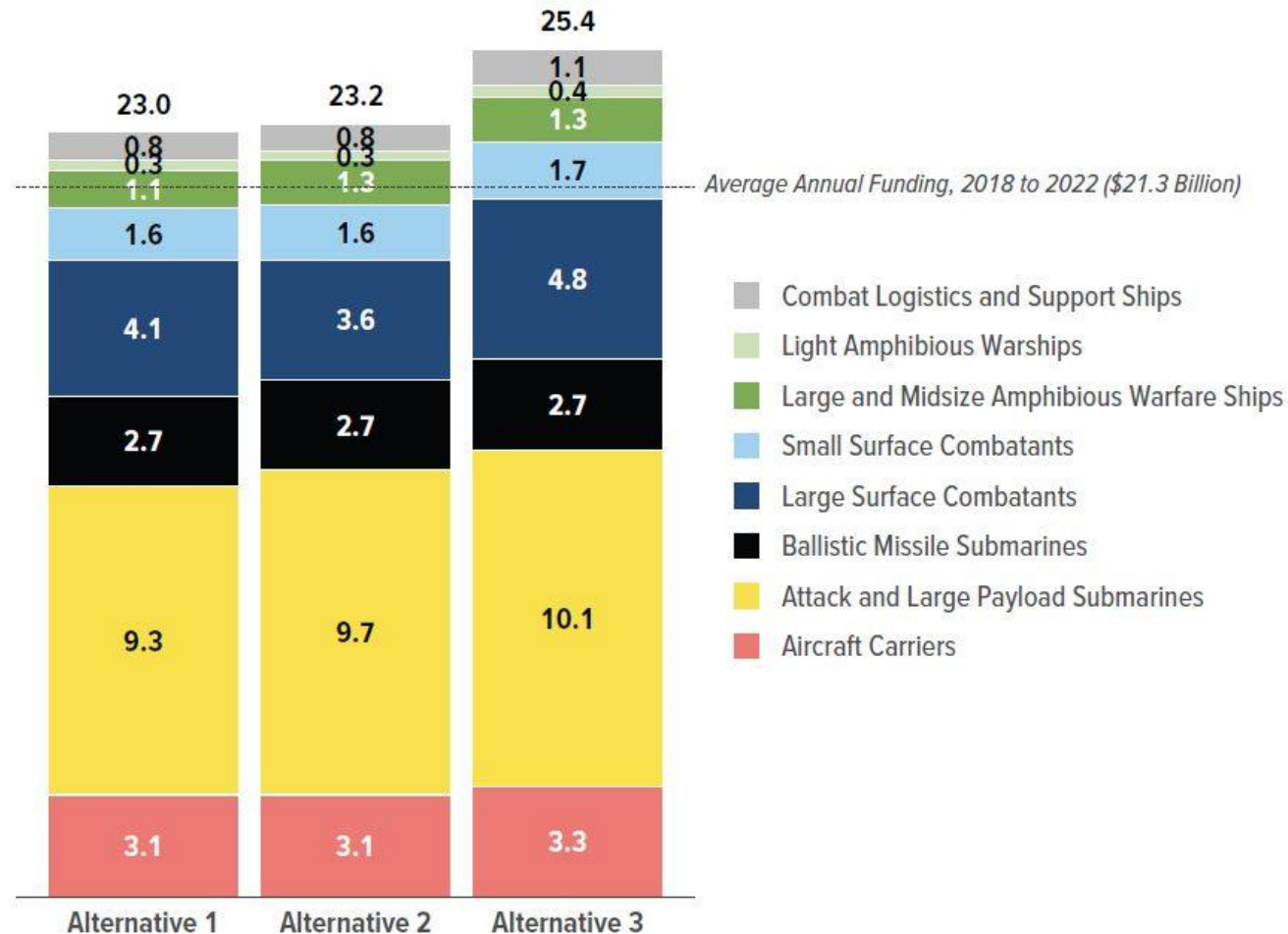




CBO's Analysis of the Navy's 2023 Shipbuilding Plan: **Costs**

The Navy's Estimates of Average Annual Costs of New-Ship Construction Under Its 2023 Plan, by Ship Type

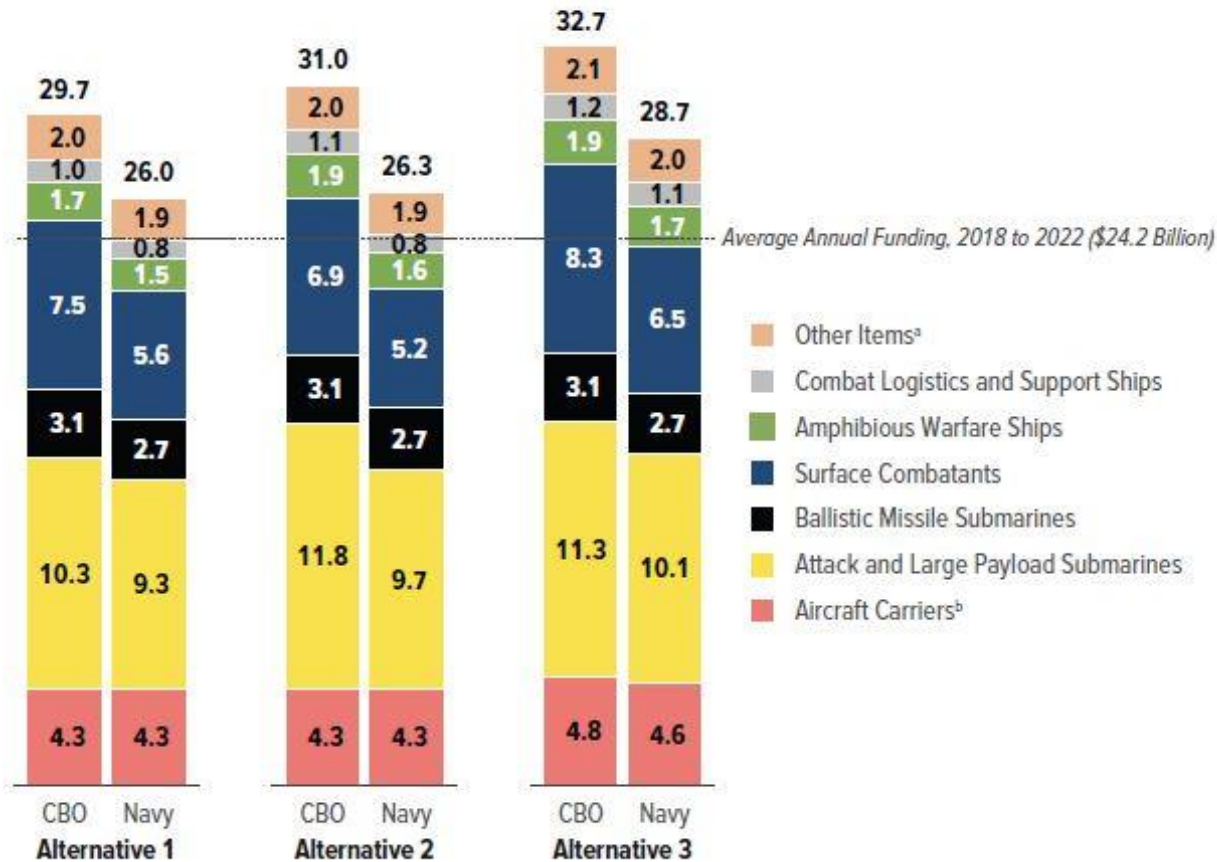
Billions of 2022 Dollars



The Navy estimates that building new ships would cost between \$23 billion and \$25 billion per year, on average, under the three alternatives in its 2023 plan.

Average Annual Total Shipbuilding Costs Under the Navy's 2023 Plan, as Estimated by CBO and the Navy

Billions of 2022 Dollars



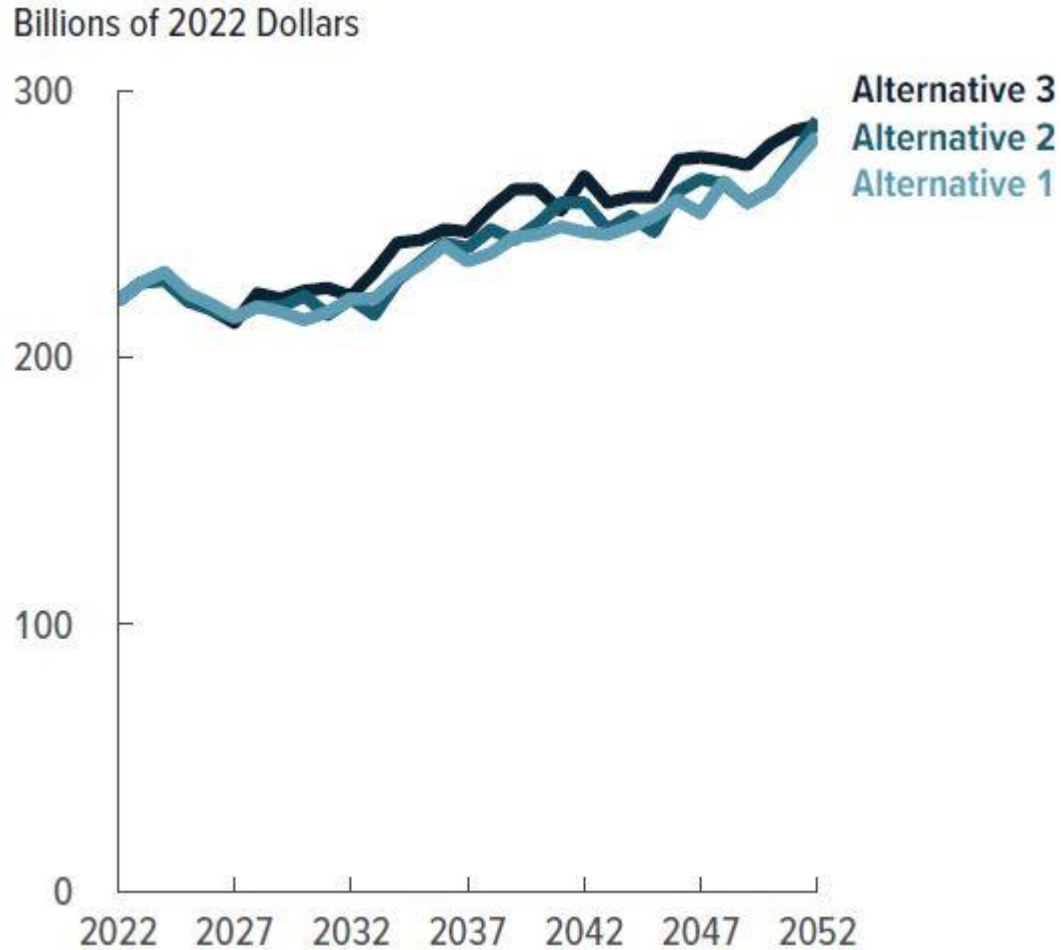
CBO estimates that the alternatives in the 2023 shipbuilding plan would cost more than the Navy anticipates.

Source: Congressional Budget Office, *An Analysis of the Navy's Fiscal Year 2023 Shipbuilding Plan* (November 2022), www.cbo.gov/publication/58447.

a. Includes construction of ships that are not part of the Navy's battle force (such as oceanographic survey ships or sealift ships), outfitting and postdelivery activities (including the purchase of smaller tools and pieces of equipment that are needed to operate a ship but that are not provided by the manufacturing shipyard as part of ship construction), efforts to extend ships' service life, service craft, and smaller items.

b. Includes funding for building new aircraft carriers as well as refueling the nuclear power plants of aircraft carriers already in the fleet.

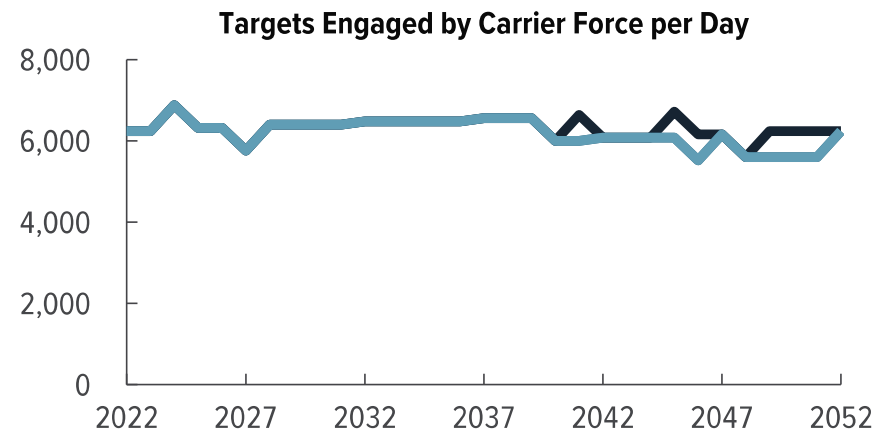
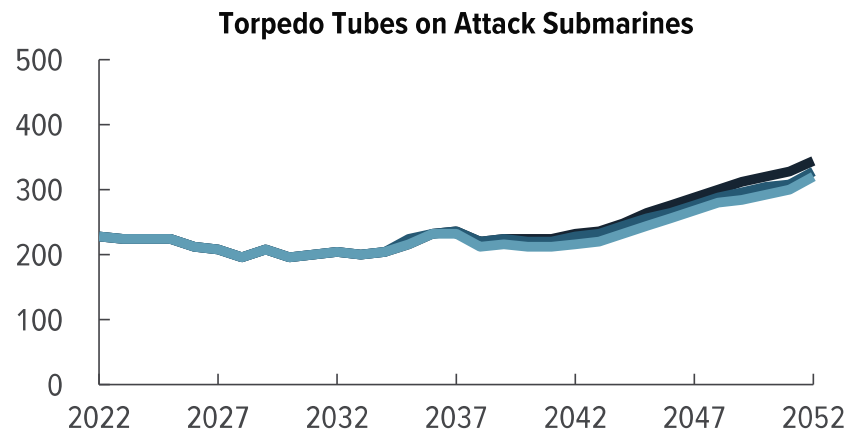
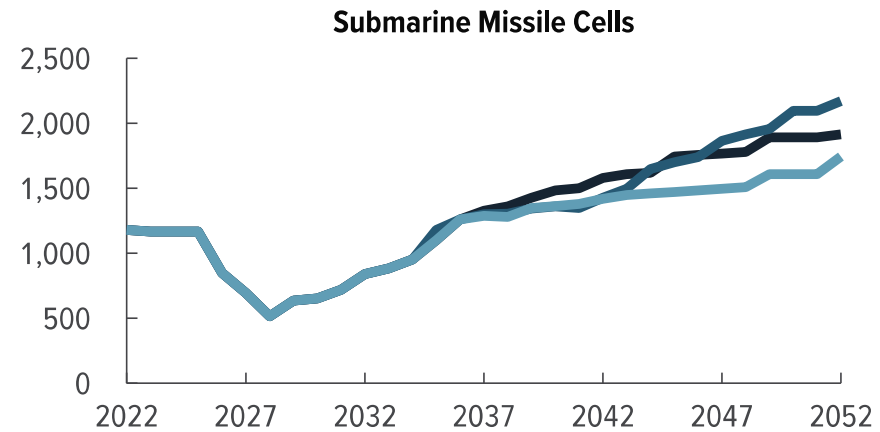
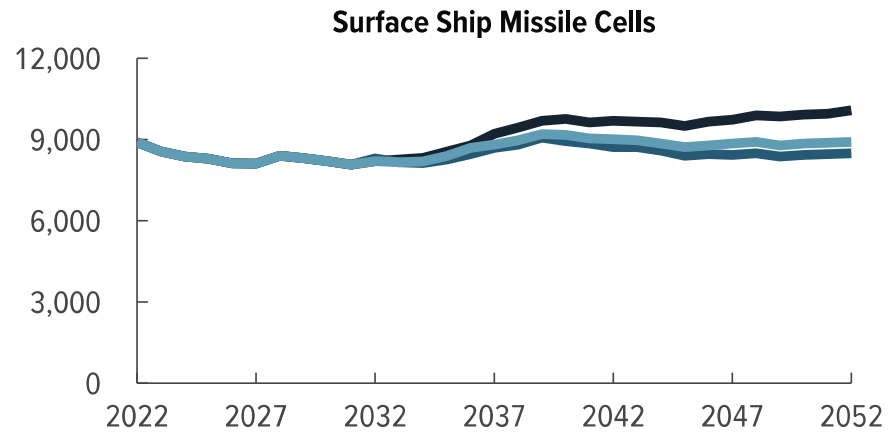
CBO's Estimate of the Navy's Total Budget Under Its 2023 Plan



As the fleet grew in size under the alternatives in the 2023 plan, the Navy's total budget would grow from \$220 billion today to roughly \$290 billion by 2052.

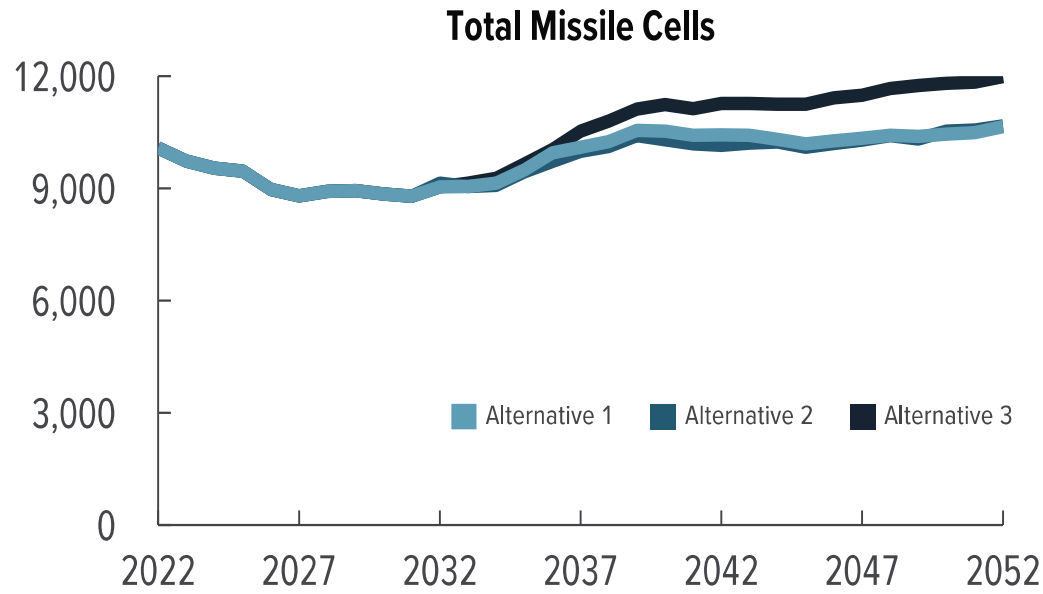
CBO's Analysis of the Navy's 2023 Shipbuilding Plan: Measures of Capability

Measures of Lethality in the Navy's 2023 Plan

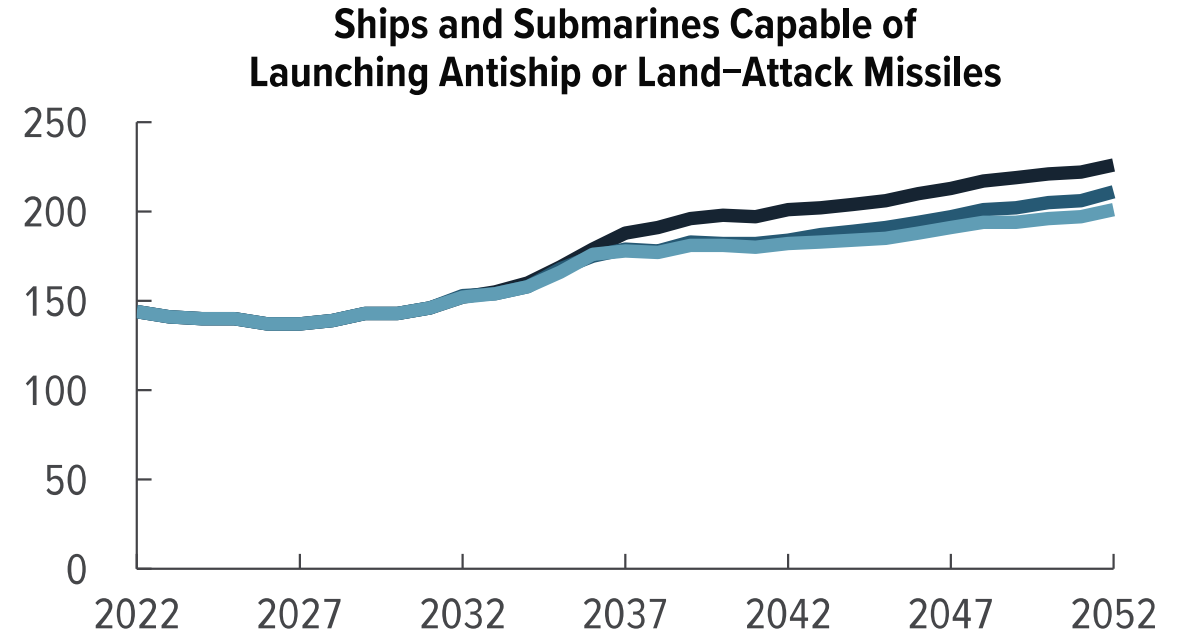


Alternative 1 Alternative 2 Alternative 3

CBO's Estimates of Measures of Lethality *and* Distribution of Firepower Under the Navy's 2023 Plan



The number of total missile cells decreases by 13 percent in 2031 before growing by 6 percent in 2052 under Alternatives 1 and 2, and by 19 percent under Alternative 3.



The total number of ships and submarines capable of launching missiles falls by 5 percent in 2026 before growing by 23 percent in 2052 under Alternative 1, 30 percent under Alternative 2, and 36 percent under Alternative 3.

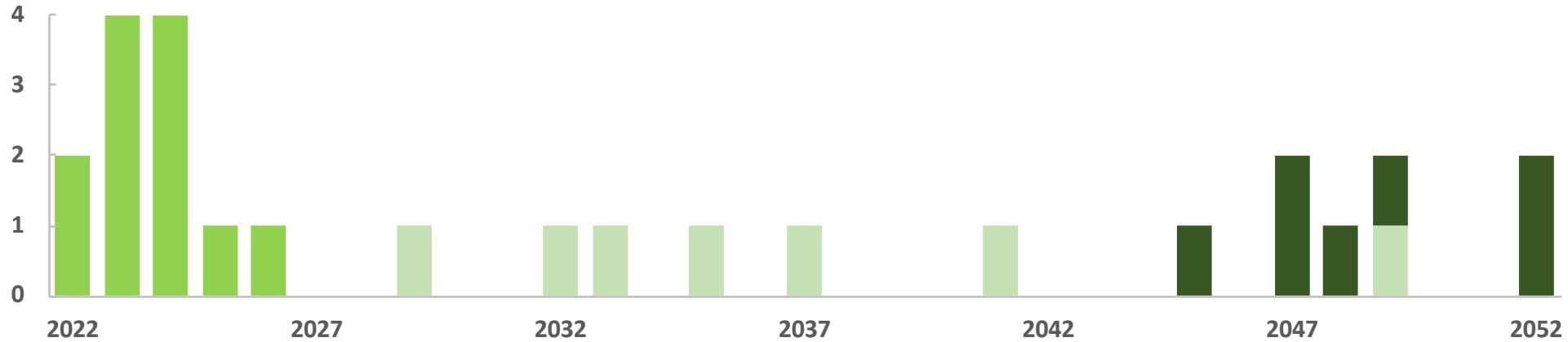
The Amphibious Warfare Force Under the Navy's 2023 Shipbuilding Plan and the 2023 National Defense Authorization Act

Maintaining a Force of 31 Large and Midsize Amphibious Ships Would Require Changes in Ship Retirements and Purchases

- The 2023 NDAA mandates a force of 31 large and midsize amphibious warfare ships. Unlike the Navy's goal of a 355-ship fleet expressed in prior years, the objective for amphibious ships can be implemented immediately.
- The service life of large and midsize amphibious ships would need to remain at about 40 years.
- Ship purchases would need to increase by 65 percent to 130 percent compared with the alternatives in the Navy's 2023 plan.
- There is tension between maintaining "force structure stability" and maintaining "shipbuilding industrial base stability."

Ship Retirements Under the Navy's 2023 Plan and Implied by the 2023 NDAA

Retirements Under the Navy's 2023 Plan



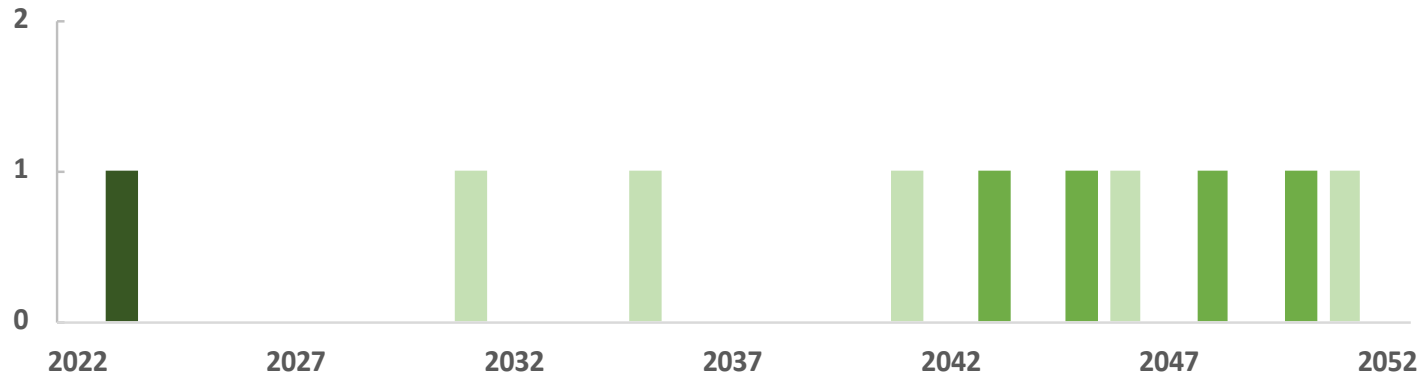
Retirements Implied by the 2023 NDAA



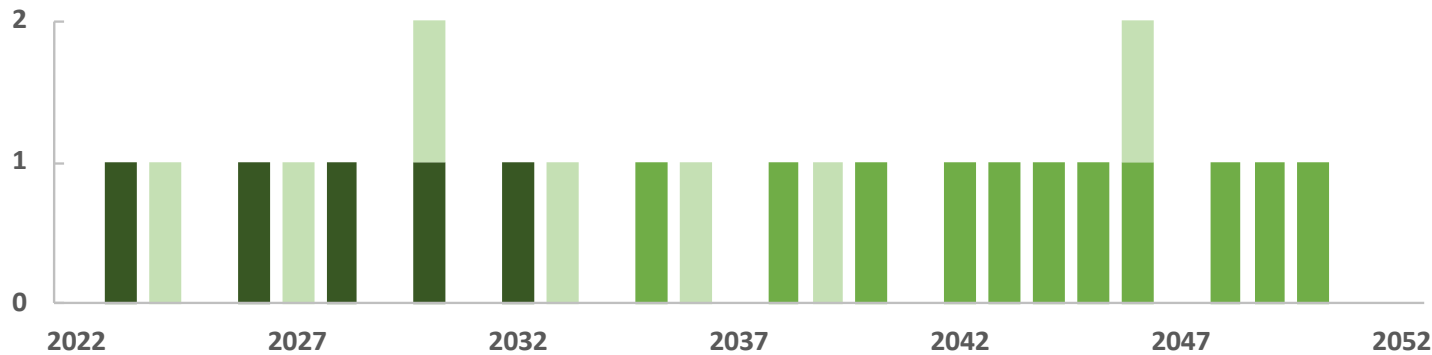
■ Whidbey Island/Harpers Ferry Class LSD-41/49 ■ Wasp Class LHD-1 ■ San Antonio Class LPD-17

Ship Purchases Under Alternative 1 in the Navy's 2023 Plan and Implied by the 2023 NDAA

Purchases Under the Navy's 2023 Plan, Alternative 1



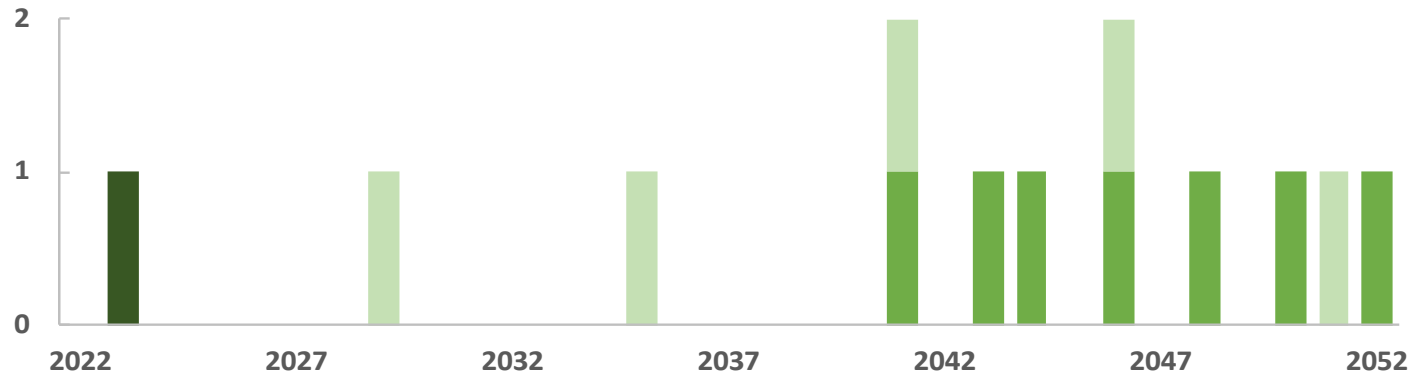
Purchases Implied by the 2023 NDAA



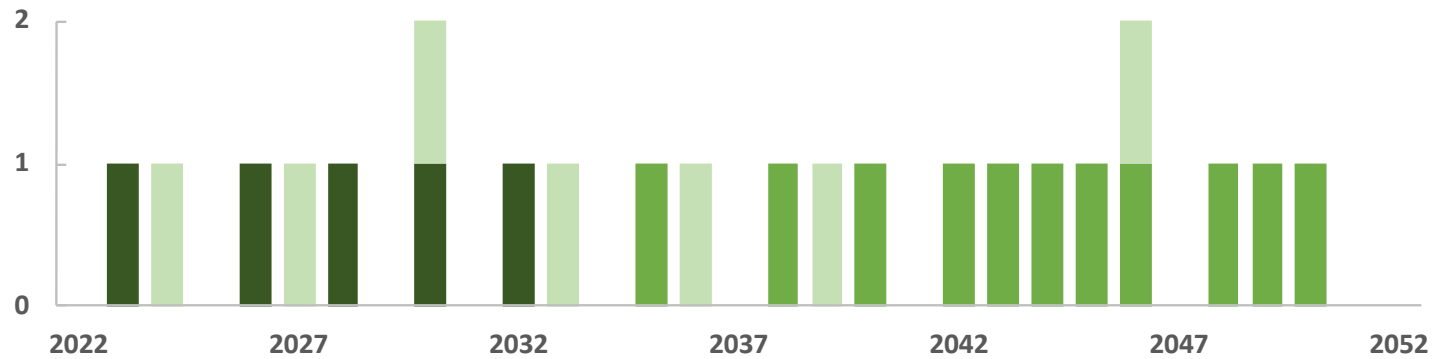
■ San Antonio Class LPD-17 ■ LPD(X) ■ America Class LHA-6

Ship Purchases Under Alternative 2 in the Navy's 2023 Plan and Implied by the 2023 NDAA

Purchases Under the Navy's 2023 Plan, Alternative 2



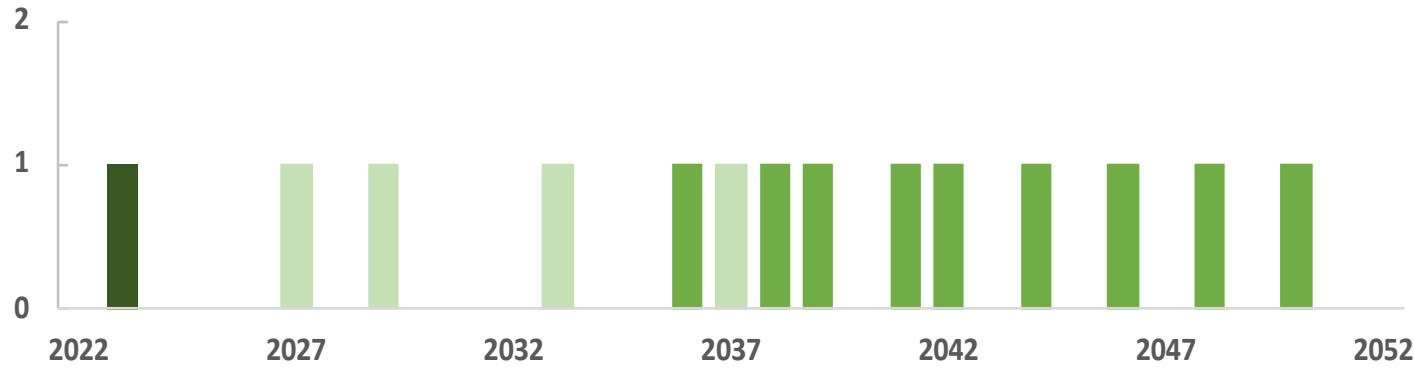
Purchases Implied by the 2023 NDAA



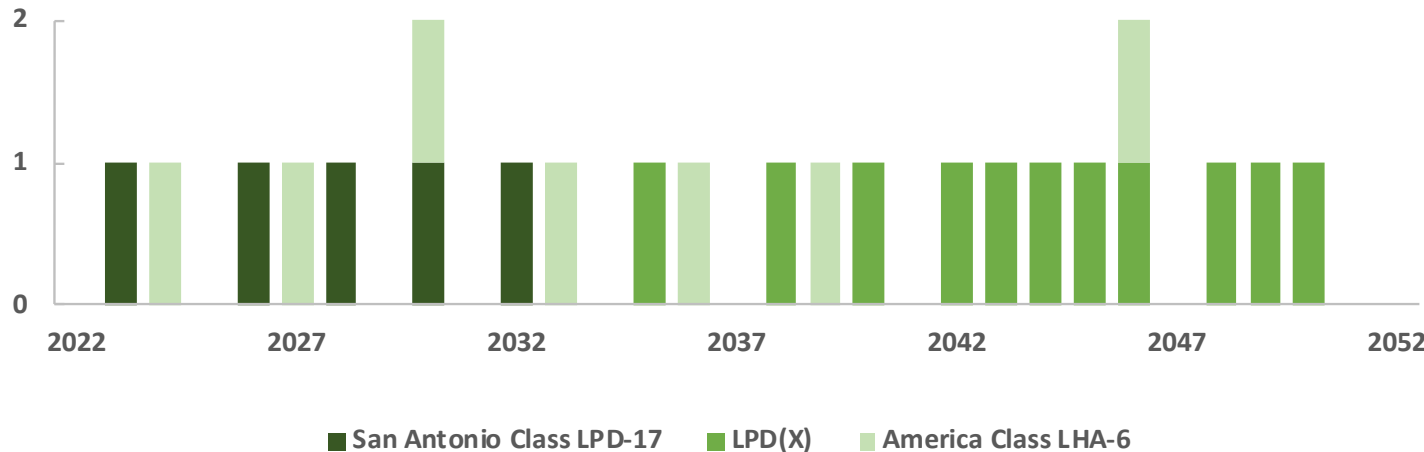
■ San Antonio Class LPD-17 ■ LPD(X) ■ America Class LHA-6

Ship Purchases Under Alternative 3 in the Navy's 2023 Plan and Implied by the 2023 NDAA

Purchases Under the Navy's 2023 Plan, Alternative 3



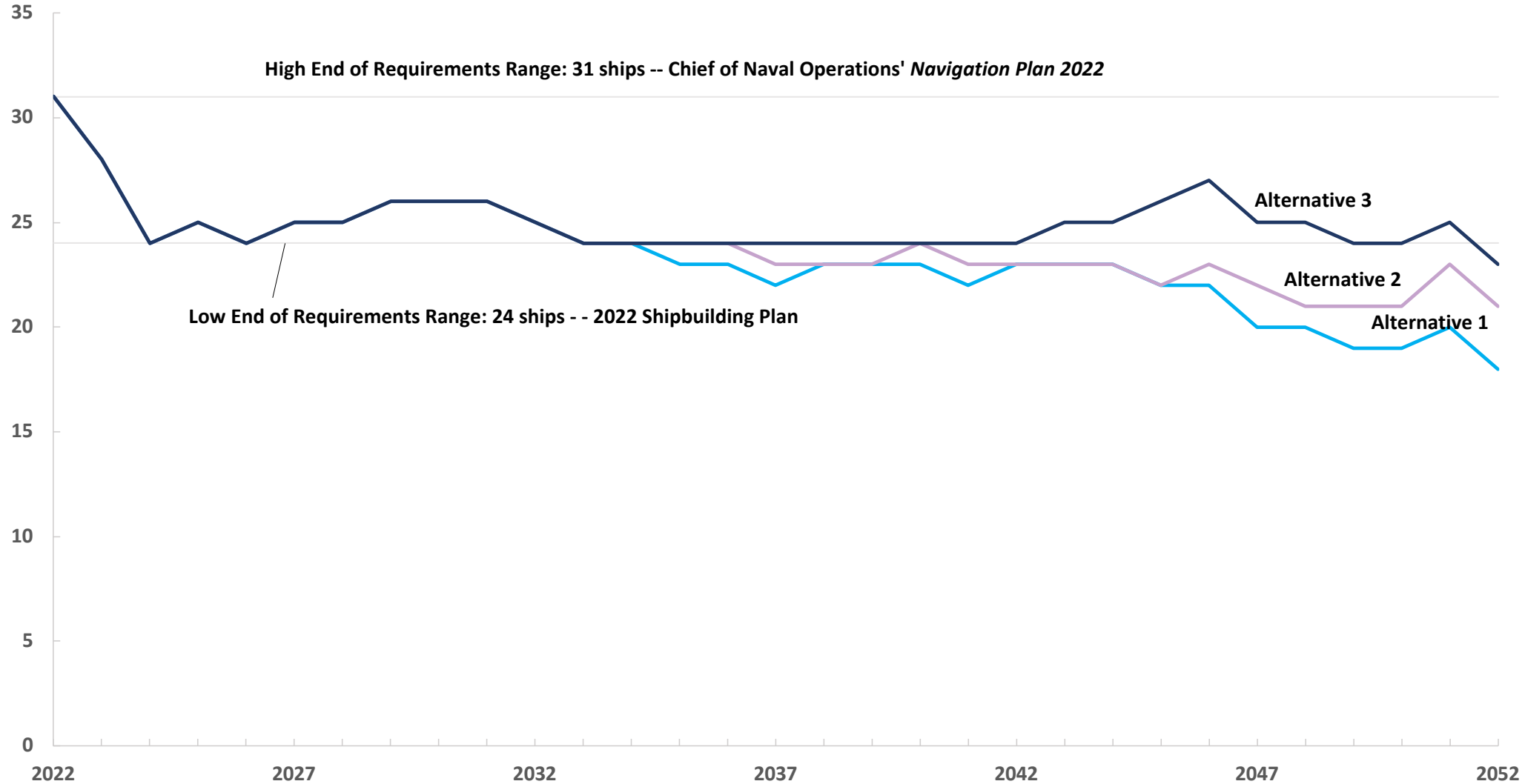
Purchases Implied by the 2023 NDAA



■ San Antonio Class LPD-17 ■ LPD(X) ■ America Class LHA-6

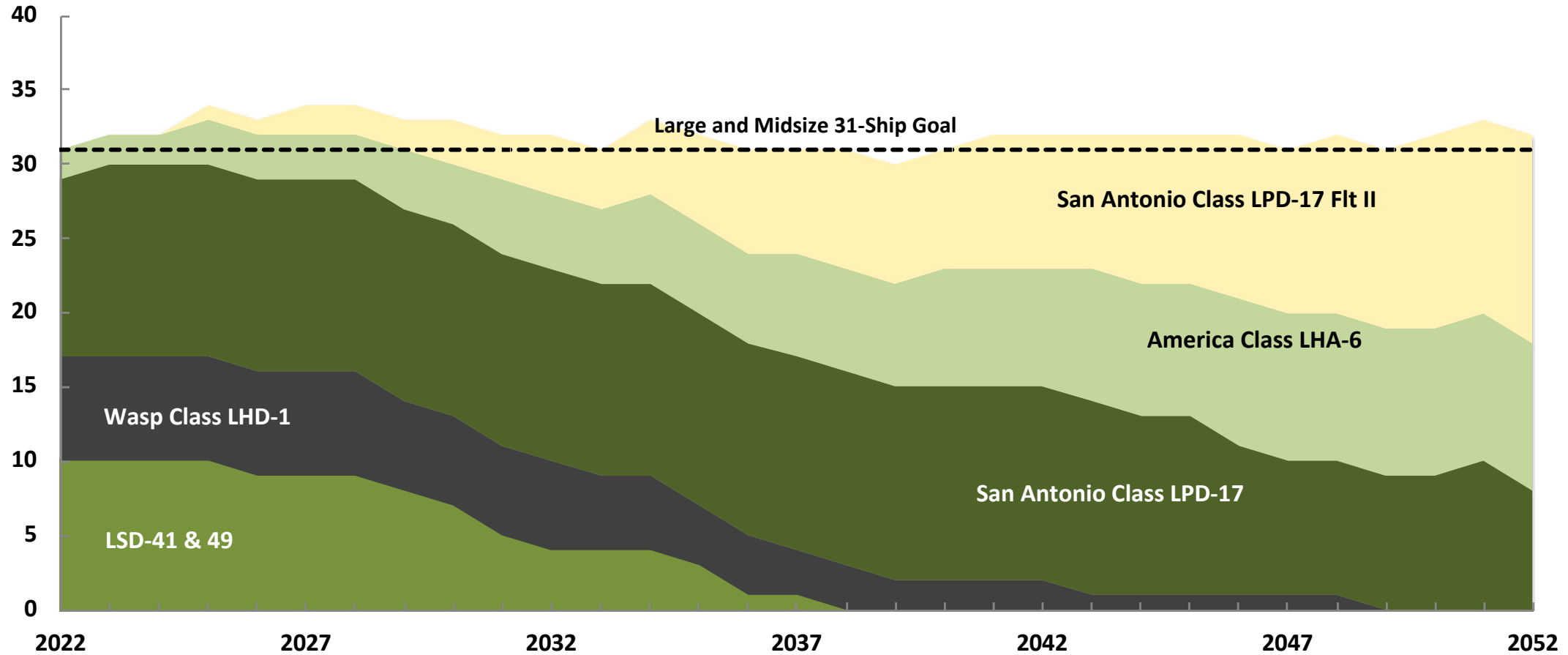


Large and Midsize Amphibious Warfare Ships: Requirements and Projections Under the Navy's 2023 Plan





Inventories of Amphibious Warfare Ships Implied by the 2023 NDAA



Inventory of Light Amphibious Warships Under the Navy's 2023 Shipbuilding Plan

