

# **The 2021 Outlook for Navy Shipbuilding: Prospects and Challenges in Building a Larger Fleet**

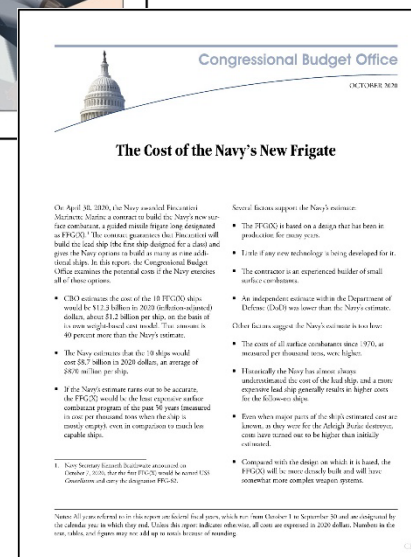
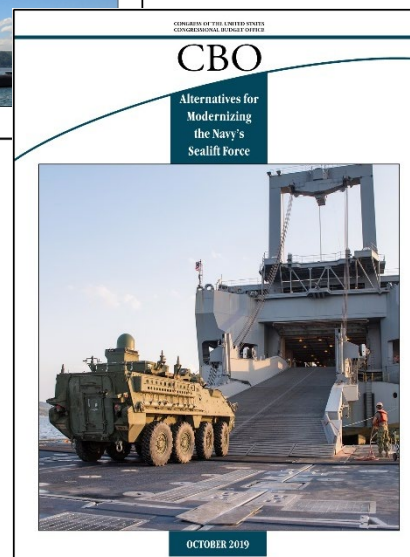
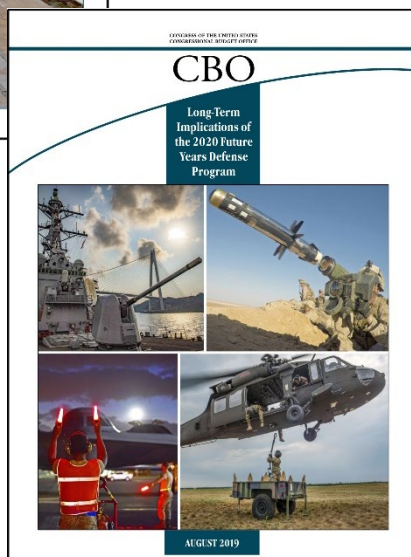
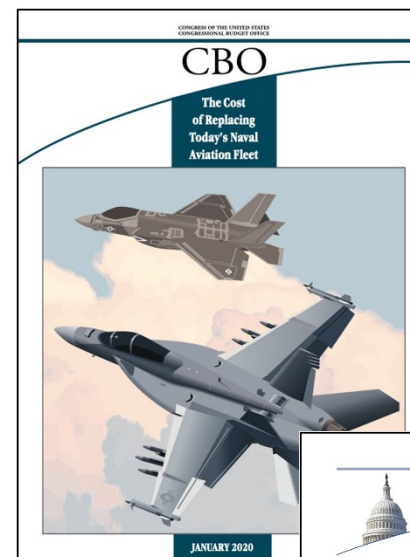
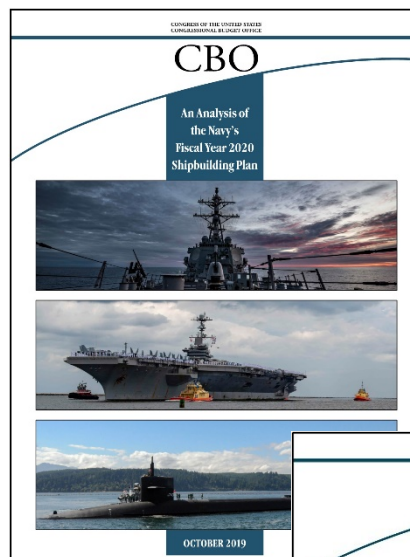
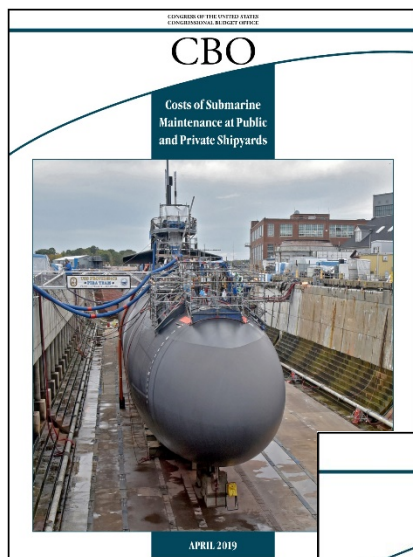
January 6, 2021

Presentation at the Bank of America Merrill Lynch  
2021 Defense Outlook and Commercial Aerospace Forum

Eric J. Labs

National Security Division

# CBO's Relevant Reports



# The 2021 Outlook for Navy Shipbuilding

- The Navy's Five-Year Plans for Ship, Aircraft, and Weapons Purchases
- A Historical Perspective on the Navy's Shipbuilding Budget
- Building a Larger Fleet?
- The Challenges of Building a Larger Fleet

# **The Navy's Five-Year Plans for Ship, Aircraft, and Weapons Purchases**

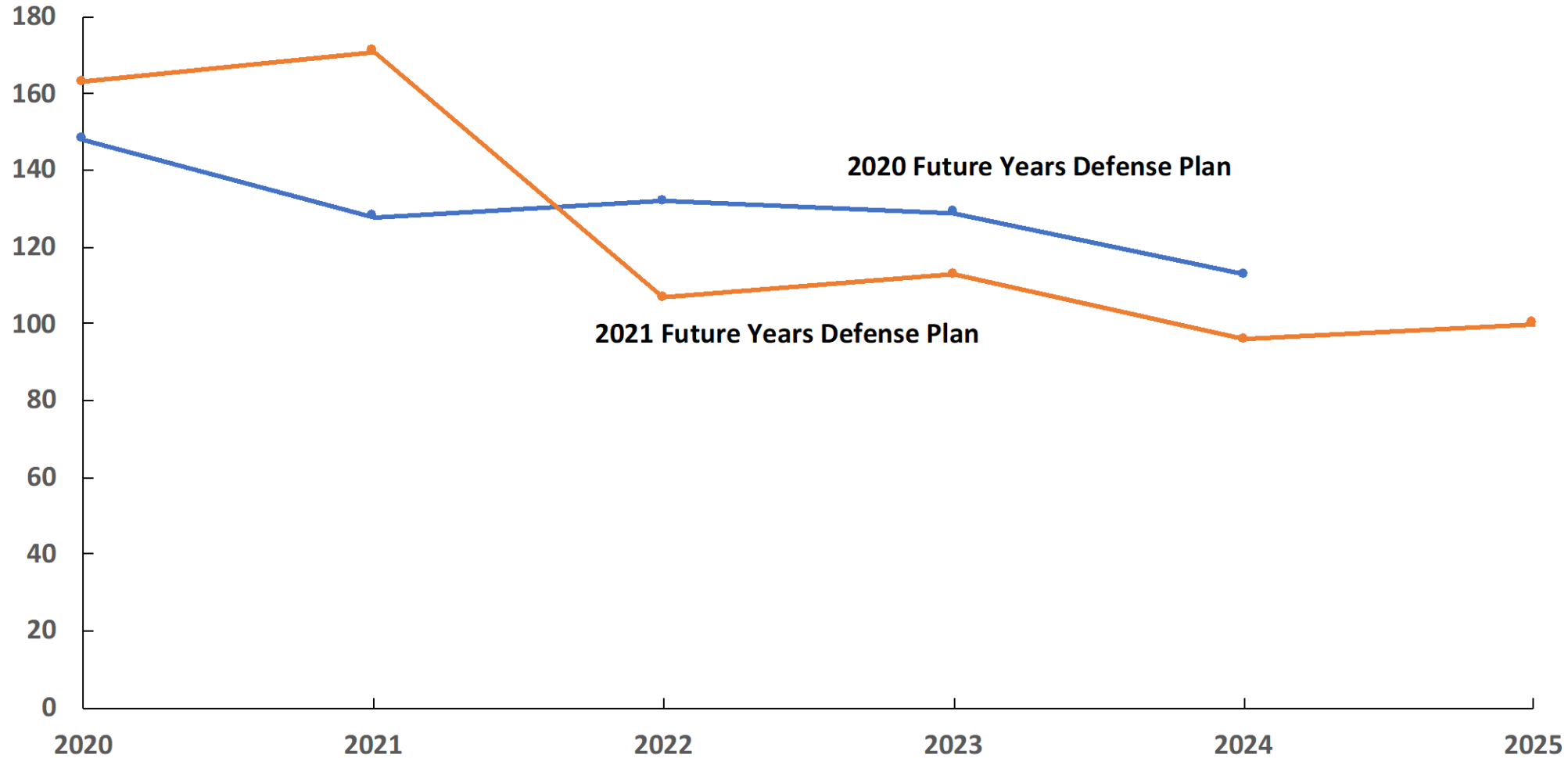
# Ship Purchases Under the Navy's Five-Year 2020 and 2021 Shipbuilding Plans, 2021 to 2025

Ship Type	2020 Shipbuilding Plan	2021 Shipbuilding Plan	Difference
Aircraft Carriers	0	0	0
Ballistic Missile Submarines	2	2	0
Attack Submarines	10	9	-1
Large Surface Combatants (CGs/DDGs)	12	8	-4
Small Surface Combatants (LCSs/FFGs)	10	9	-1
Amphibious Warfare Ships	2	2	0
Logistics and Support Ships	<u>14</u>	<u>12</u>	<u>-2</u>
<b>Total Battle Force Ships</b>	<b>50</b>	<b>42</b>	<b>-8</b>
<b>Unmanned Systems (LUSV, XLUUV)</b>	<b>10</b>	<b>21</b>	<b>11</b>



# Aircraft Purchases Under the Navy's Five-Year 2020 and 2021 Future Years Defense Plans, 2021 to 2025

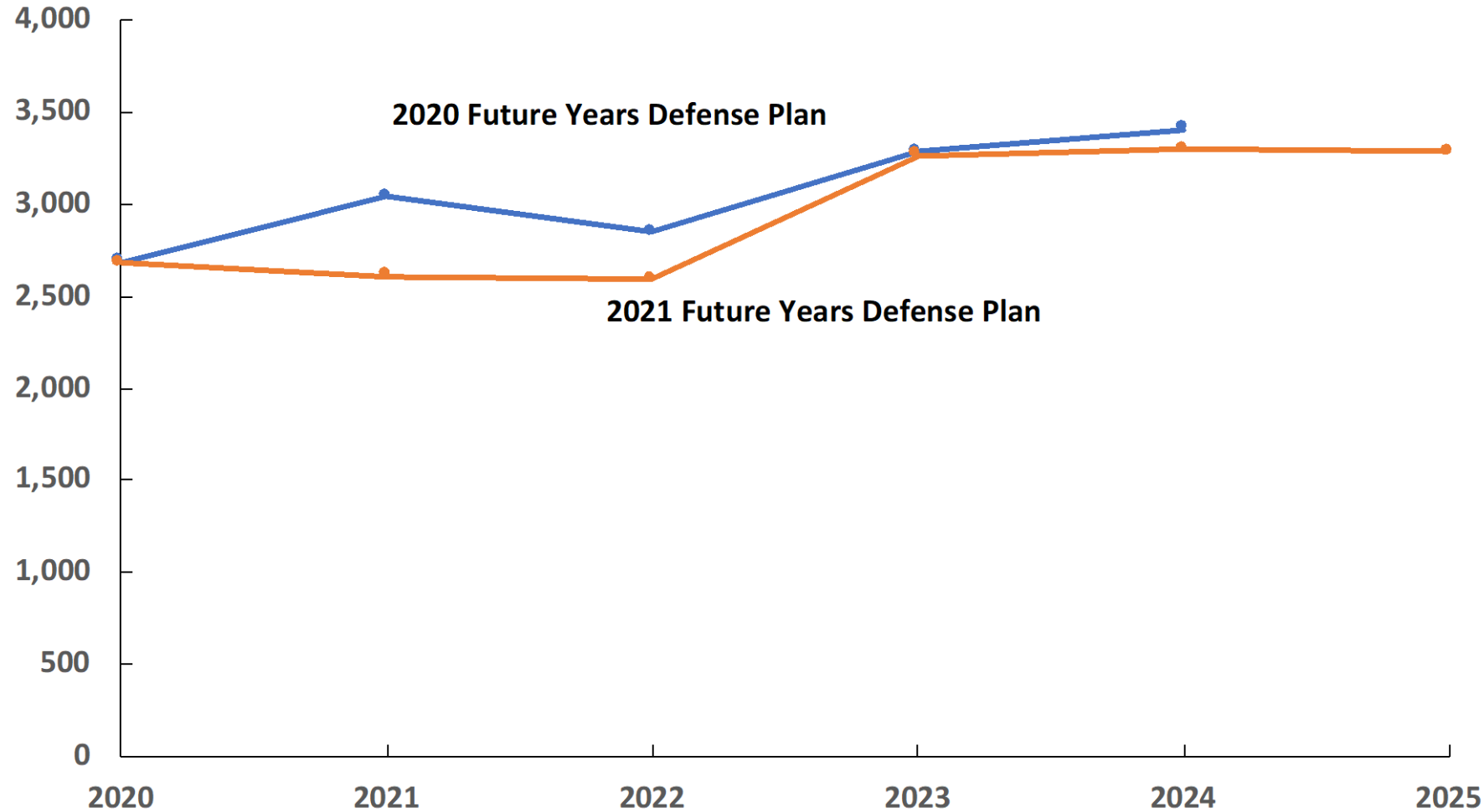
Number of Aircraft





# Weapons Purchases Under the Navy's Five-Year 2020 and 2021 Future Years Defense Plans, 2021 to 2025

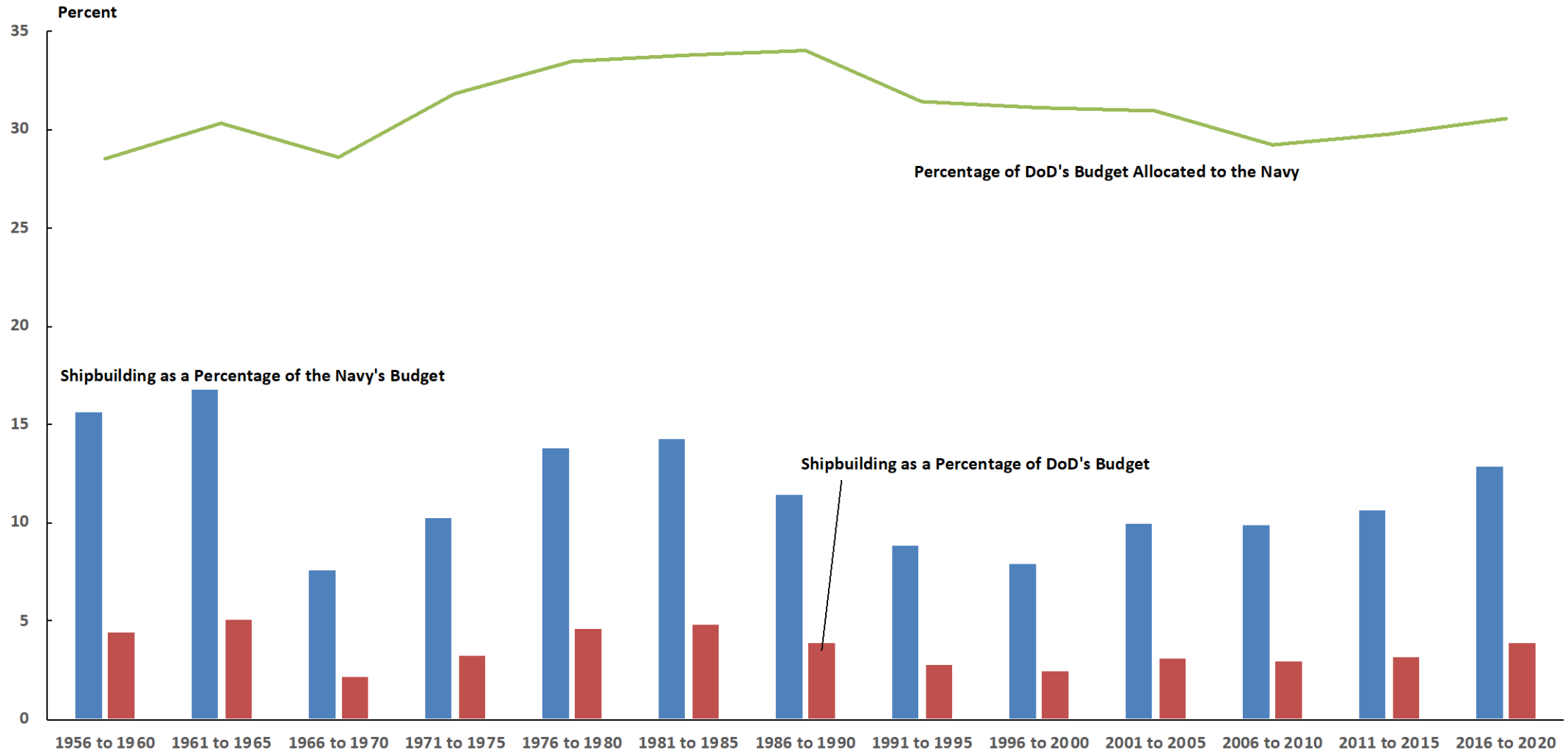
Number of Weapons



# **A Historical Perspective on the Navy's Shipbuilding Budget**

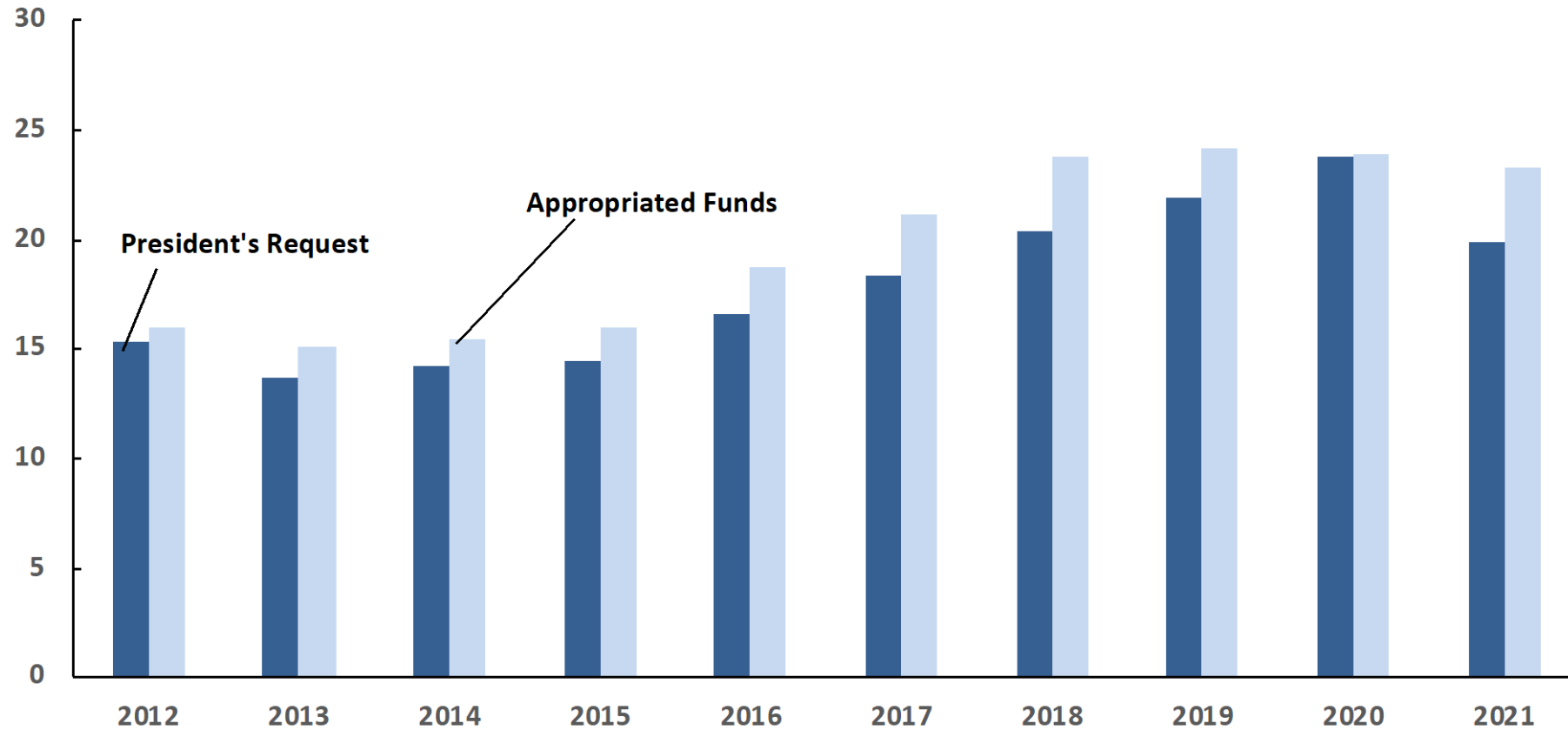


# Shipbuilding as a Percentage of the Department of the Navy's and the Department of Defense's Budgets



# Requested and Appropriated Shipbuilding Budgets, 2012 to 2021

Billions of Dollars



From 2012 to 2021, the Congress appropriated \$1.9 billion per year more, on average, than the President requested.



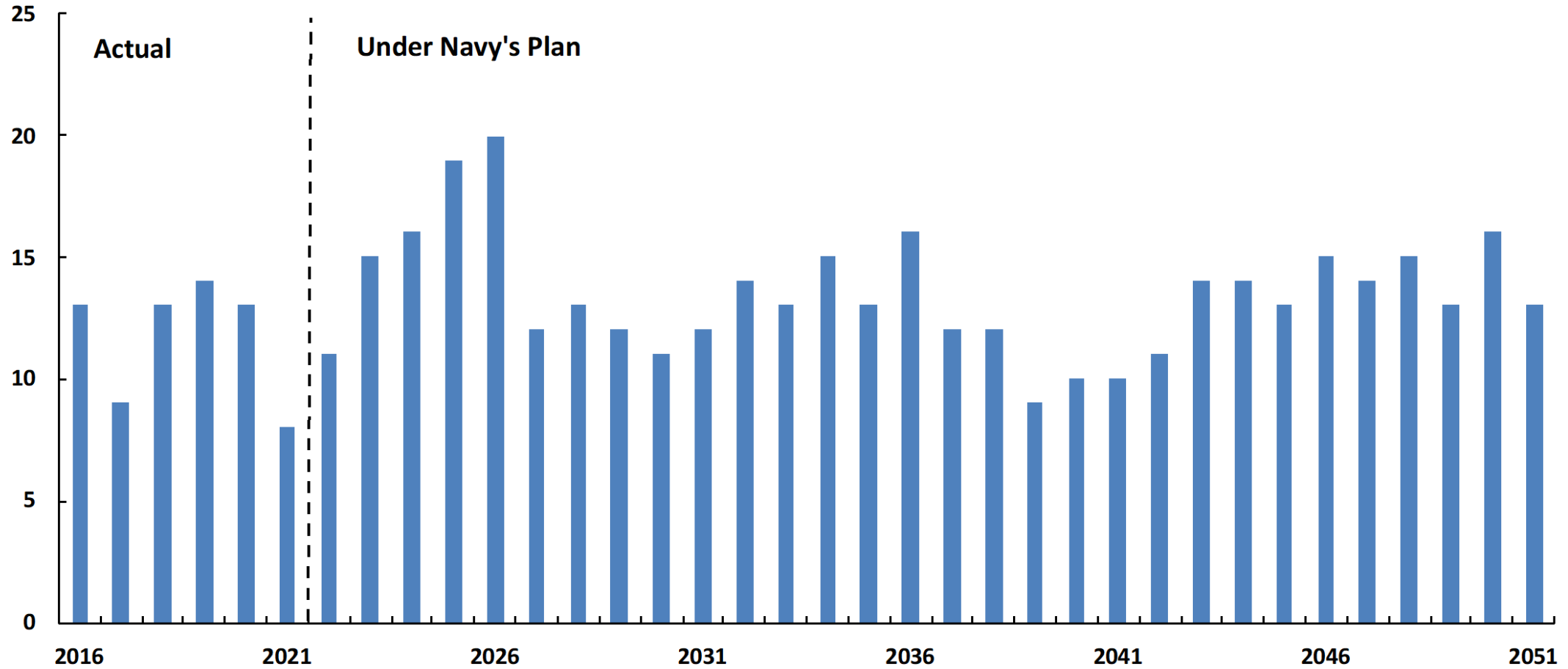
# **Building a Larger Fleet?**

# The Future Naval Forces Study's Larger and More Distributed Fleet

Ship Type	2016 FSA Inventory Goals	FNFS Inventory Goals
Aircraft Carriers	12	8 to 11
Light Carriers	0	0 to 6
Ballistic Missile Submarines	12	12
Attack and Large Payload Submarines	66	72 to 78
Large Surface Combatants	104	73 to 88
Small Surface Combatants	52	60 to 67
Large Amphibious Warfare Ships	12	9 to 10
Amphibious Warfare Ships	26	52 to 57
Logistics and Support Ships	71	96 to 117
Unmanned Surface Vehicles	n.a.	119 to 166
Unmanned Underwater Vehicles	<u>n.a.</u>	<u>24 to 76</u>
<b>Total Manned Ships</b>	<b>355</b>	<b>382 to 446</b>
<b>Total Unmanned Systems</b>	<b>0</b>	<b>143 to 242</b>
<b>Total Manned and Unmanned</b>	<b>355</b>	<b>525 to 688</b>

# Ship Purchases Under the Navy's December 2020 Plan

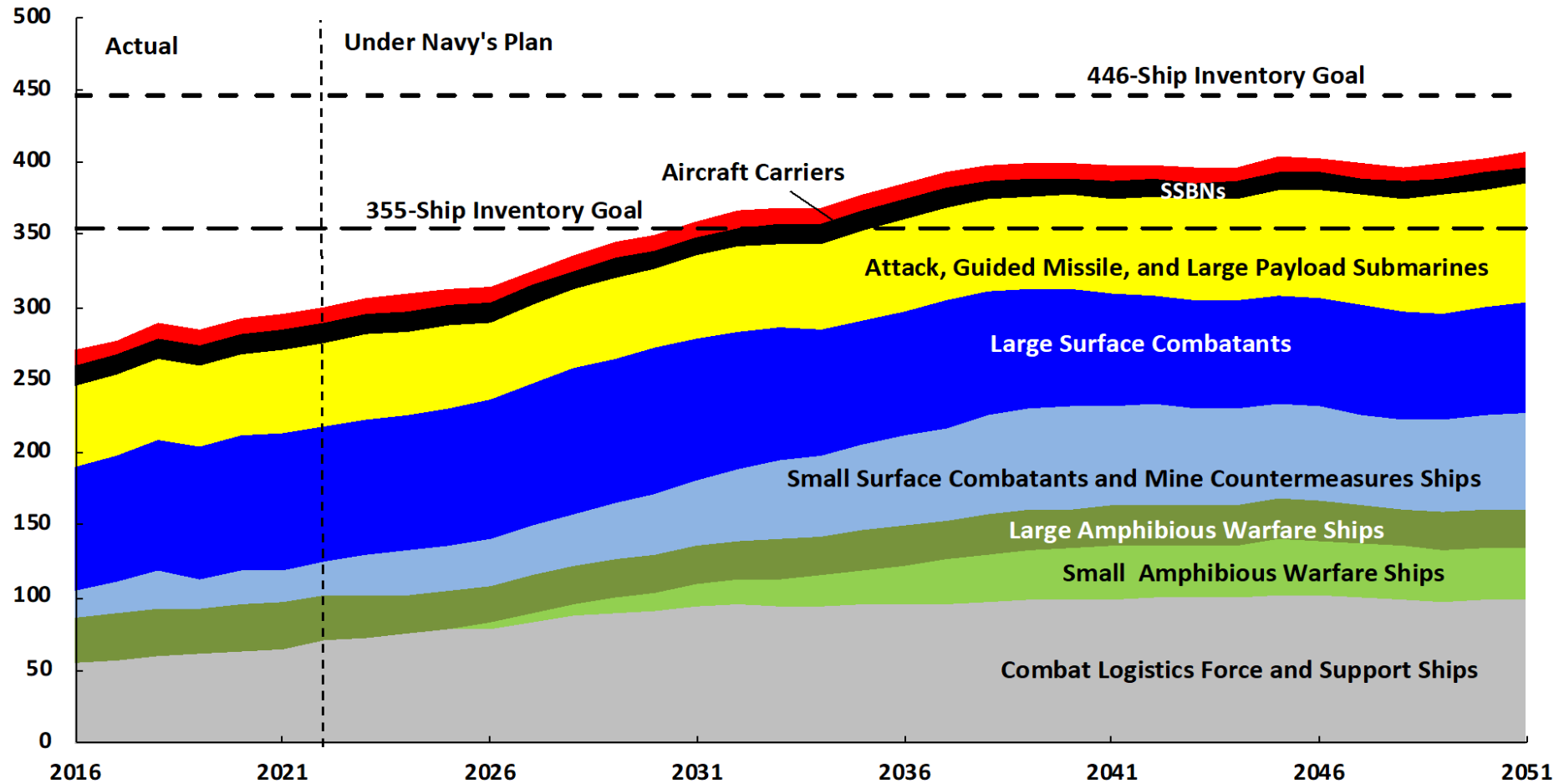
Number of Ships





# Manned Ships Under the Navy's December 2020 Plan

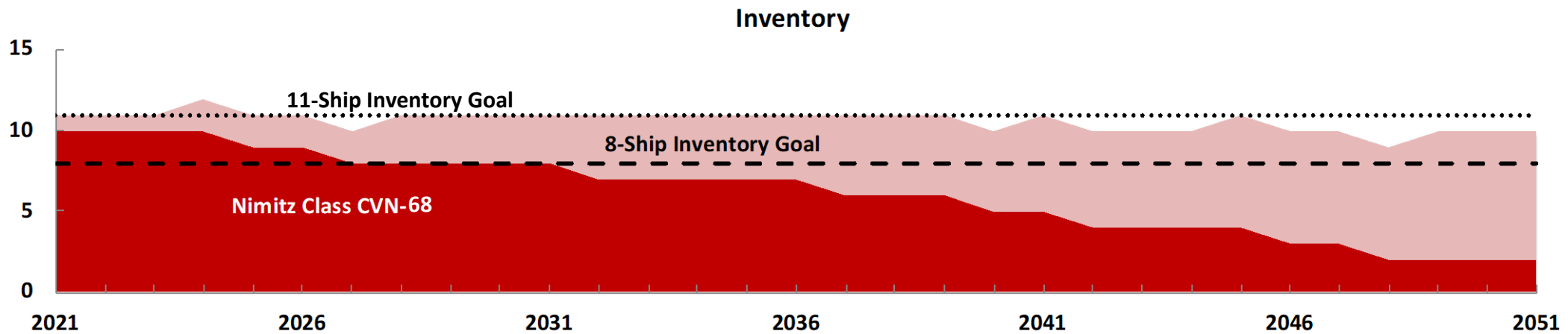
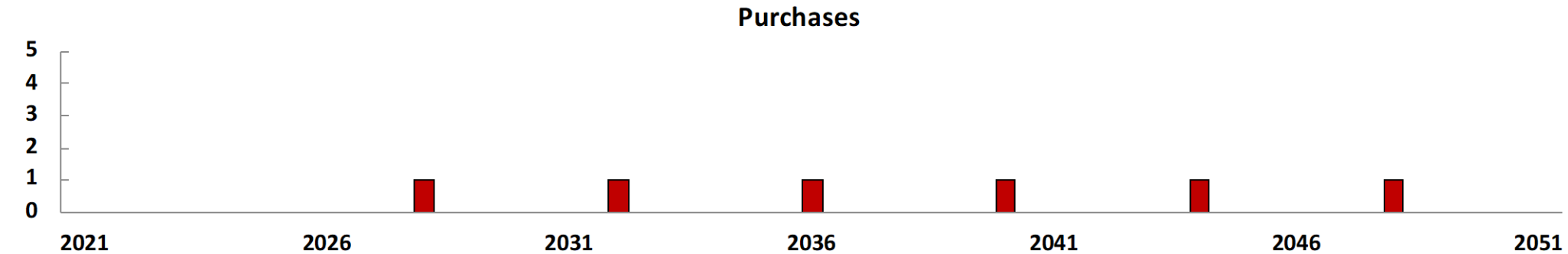
Number of Ships





# Aircraft Carriers Under the Navy's December 2020 Plan

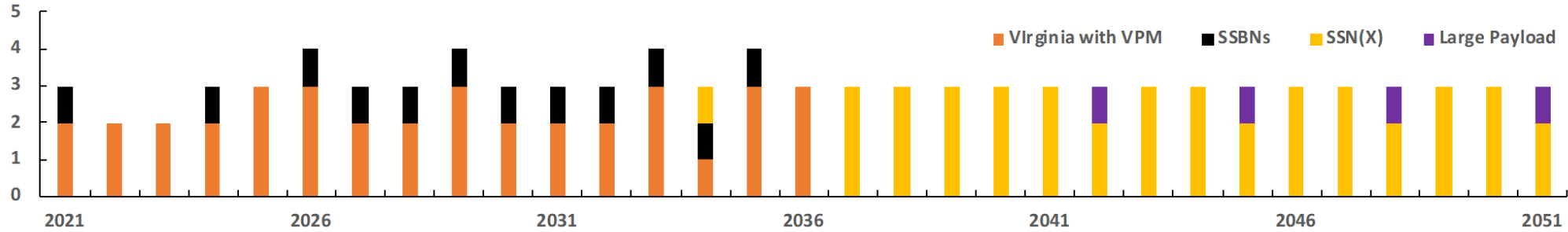
Number of Ships



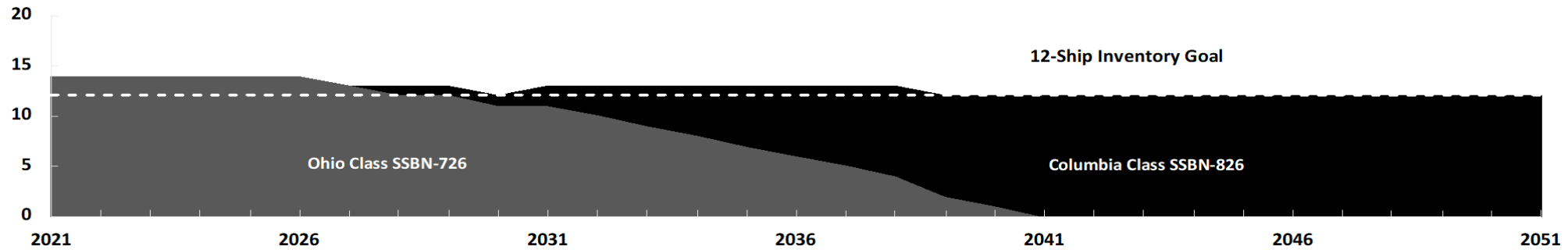
# Submarines Under the Navy's December 2020 Plan

## Number of Ships

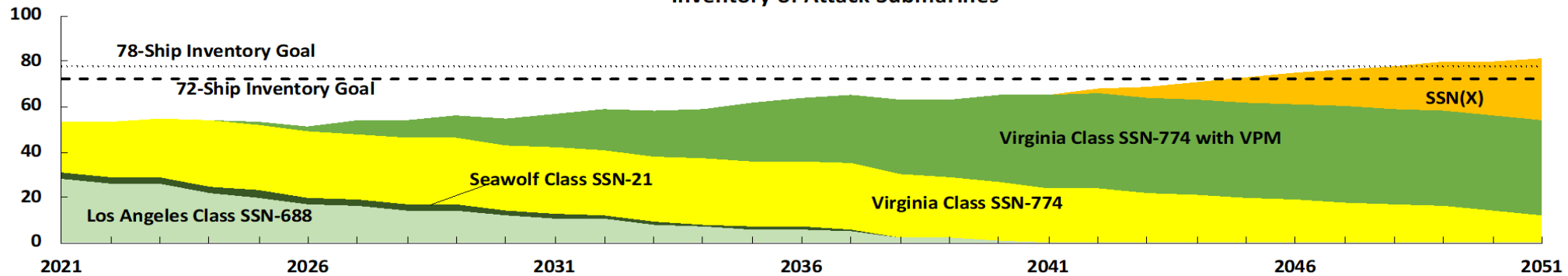
## Purchases



## Inventory of Strategic Ballistic Missile Submarines



## Inventory of Attack Submarines



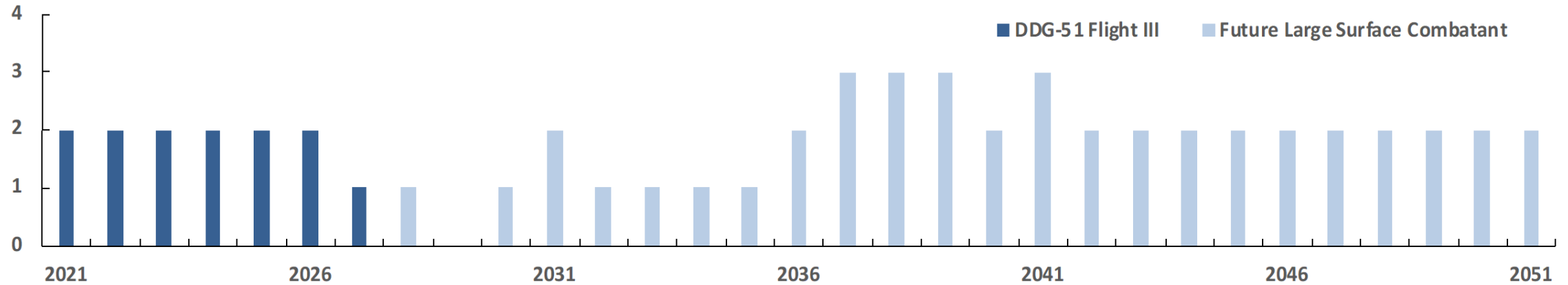




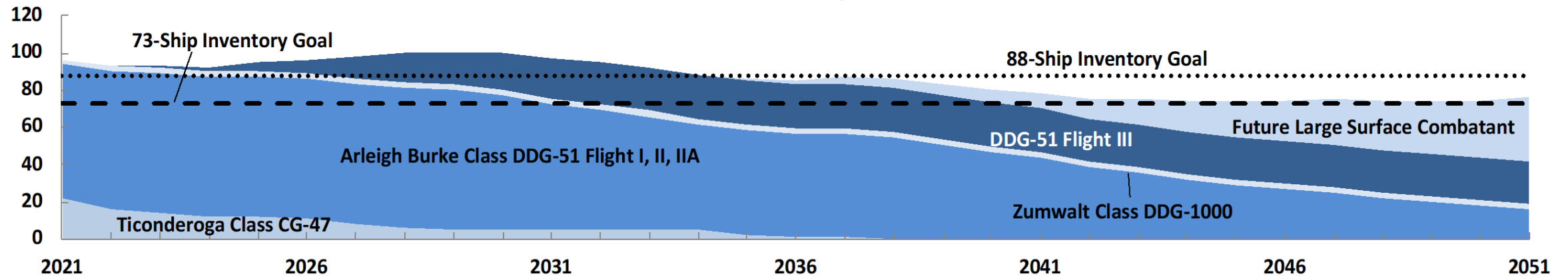
# Large Surface Combatants Under the Navy's December 2020 Plan

### Number of Ships

### Purchases



### Inventory

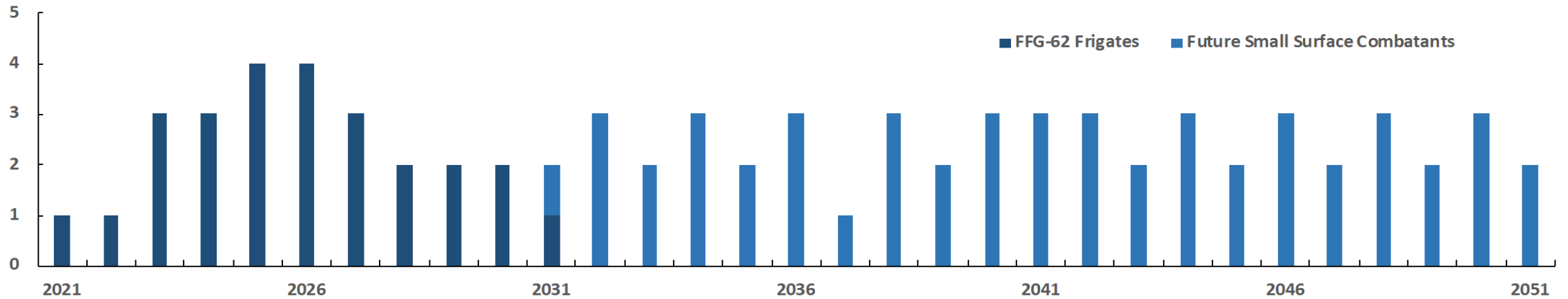




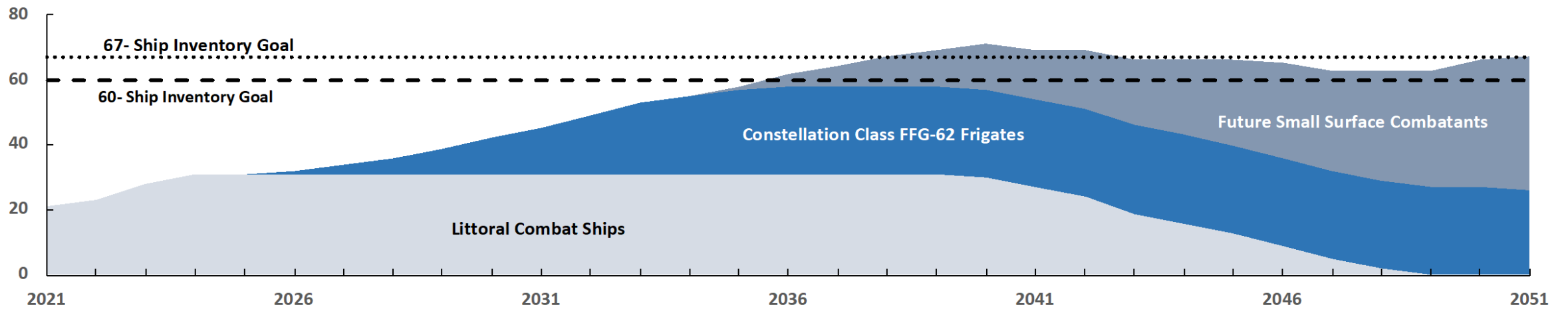
# Small Surface Combatants Under the Navy's December 2020 Plan

## Number of Ships

## Purchases

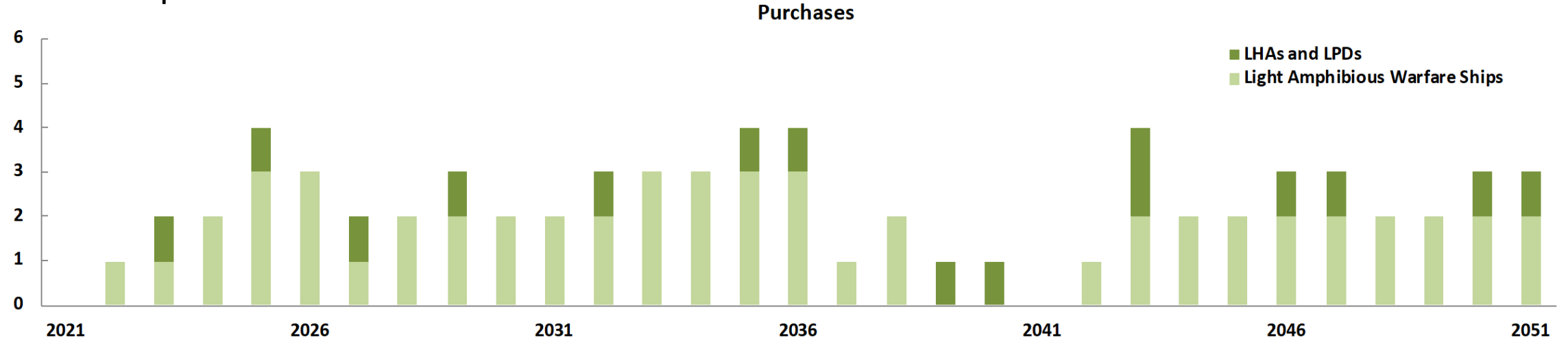


## Inventory

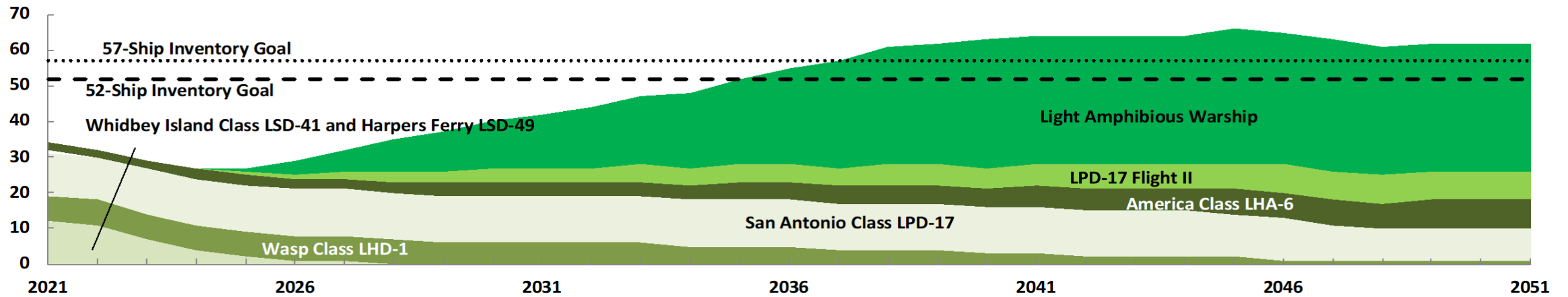


# Amphibious Warfare Ships Under the Navy's December 2020 Plan

### Number of Ships

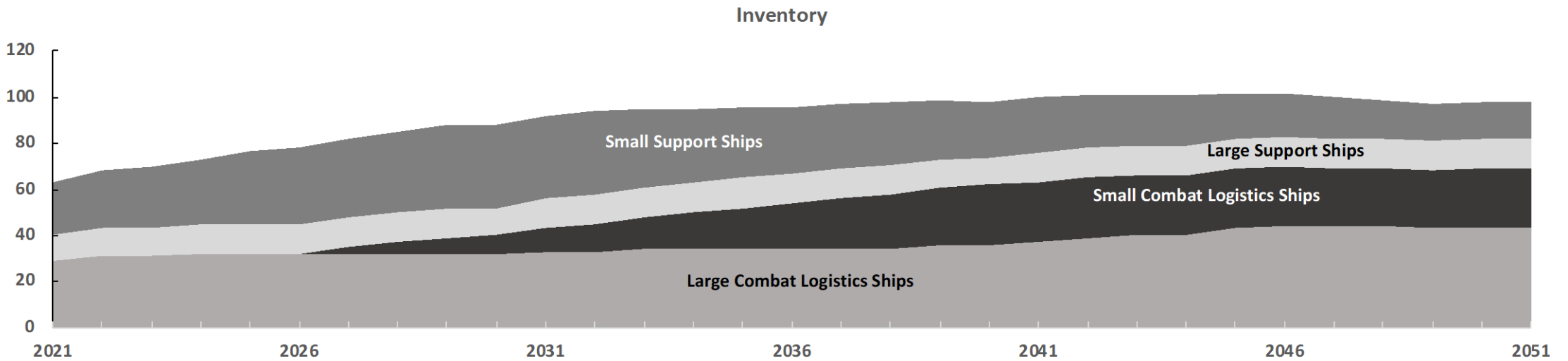
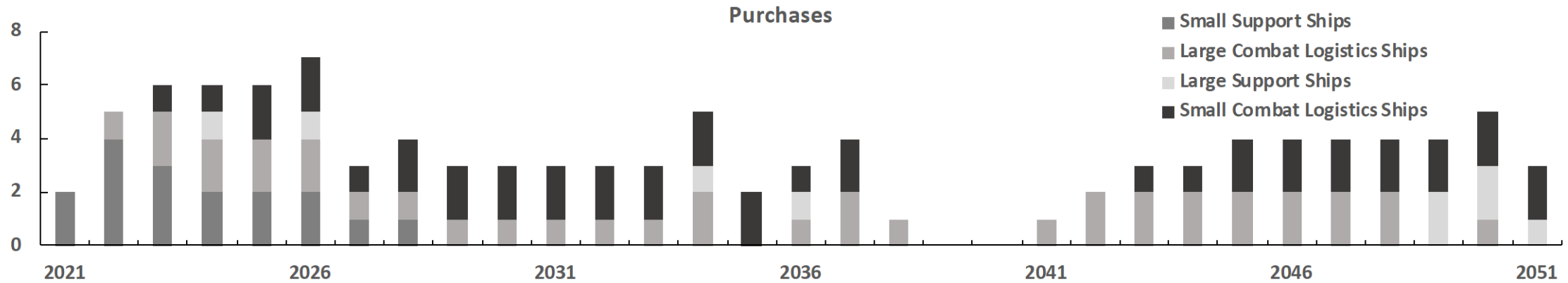


### Inventory

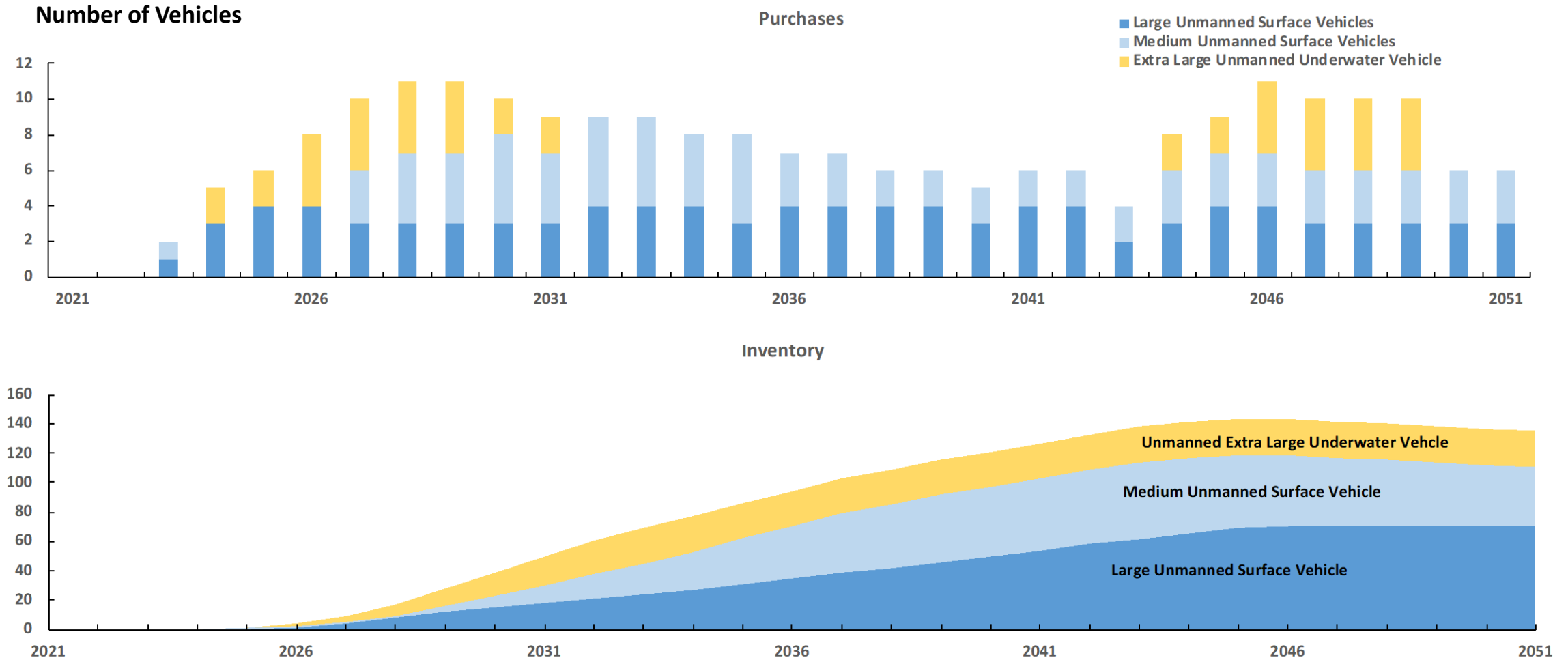


# Combat Logistics and Support Ships Under the Navy's December 2020 Plan

Number of Ships



# Unmanned Surface and Underwater Vehicles Under the Navy's December 2020 Plan





# **Challenges of Building a Larger Fleet**

# Challenges of Building a Larger Fleet

- Paying for a Future Fleet
- Cost Growth in Ship Programs
- Designing and Building New Ships
- Industrial Base

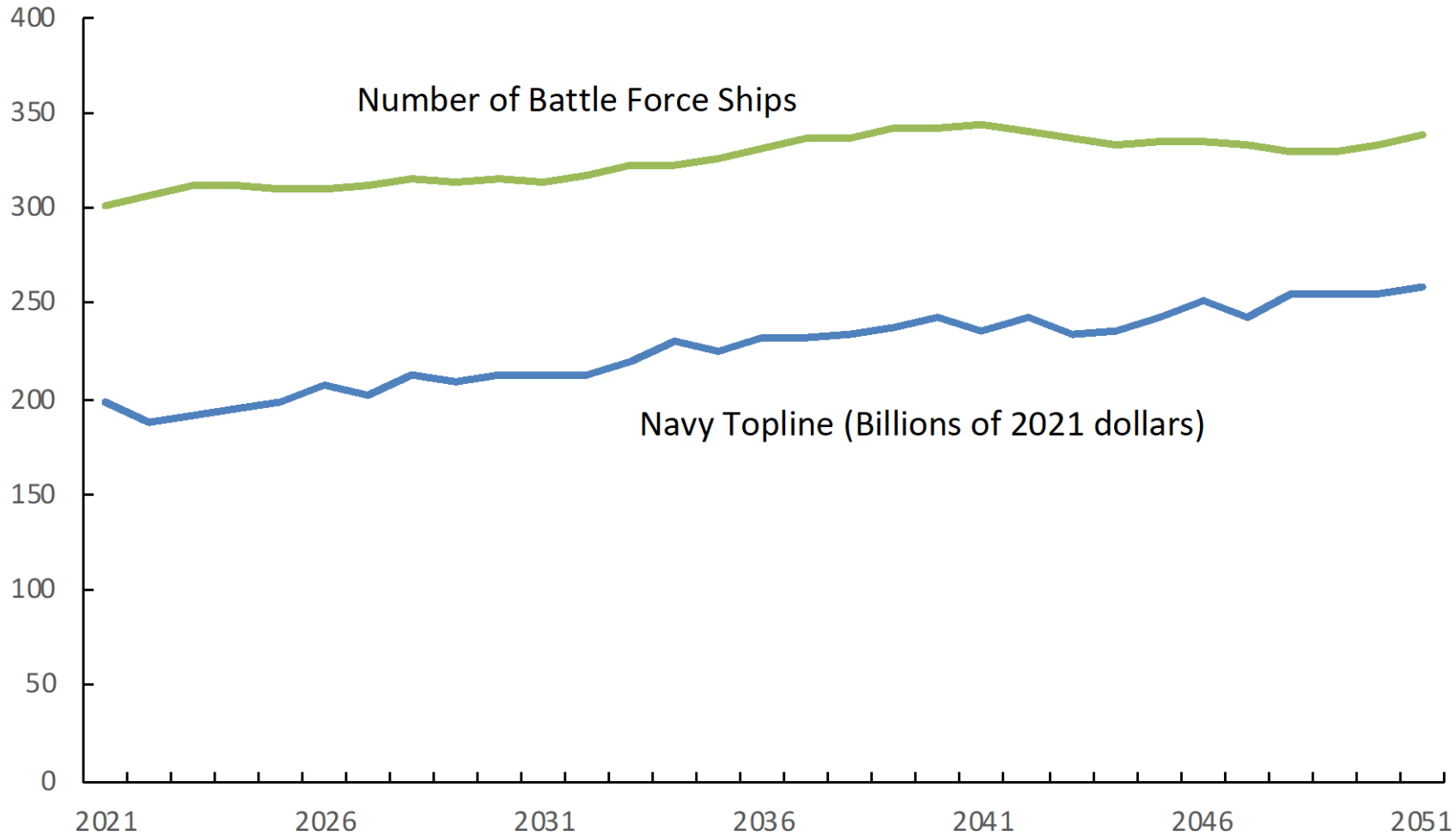
# Illustrative Average Annual Steady-State Shipbuilding Costs Under the Navy's Future Naval Forces Study

Ship Type	FNFS Goals (Number of ships)		Service Life (Years)		Cost (Billions of 2020 dollars)	
	Low	High	Low	High	Low	High
Aircraft Carriers	8	11	50	50	2.1	2.9
Light Carriers	0	6	40	45	0	0.6
Ballistic Missile Submarines	12	12	42	42	2.3	2.3
Attack and Large Payload Submarines	72	78	33	42	9.2	11.2
Large Surface Combatants	73	88	35	40	5.1	7.0
Small Surface Combatants	60	67	20	30	2.0	2.9
Amphibious Warfare Ships	61	67	20	45	1.9	2.3
Logistics and Support Ships	<u>96</u>	<u>117</u>	<u>30</u>	<u>45</u>	<u>1.2</u>	<u>2.0</u>
<b>Total Manned Ships</b>	<b>382</b>	<b>446</b>	<b>n.a.</b>	<b>n.a.</b>	<b>24.3</b>	<b>31.0</b>
<b>Total Unmanned Systems</b>	<b>143</b>	<b>242</b>	<b>10</b>	<b>15</b>	<b>0.9</b>	<b>2.5</b>
<b>Total Steady-State New-Ship Construction</b>	<b>525</b>	<b>688</b>	<b>n.a.</b>	<b>n.a.</b>	<b>25.2</b>	<b>33.5</b>
<b>Total Steady-State Shipbuilding</b>	<b>525</b>	<b>688</b>	<b>n.a.</b>	<b>n.a.</b>	<b>27.2</b>	<b>35.5</b>

CBO used the unit cost for ships in its October 2019 analysis of the Navy's fiscal year 2020 shipbuilding plan and the inventory goals in the Navy's December 9, 2020, plan to calculate those costs. Unit costs for unmanned systems are based on the estimates in the Navy's 2021 budget. FNFS = Future Naval Forces Study.

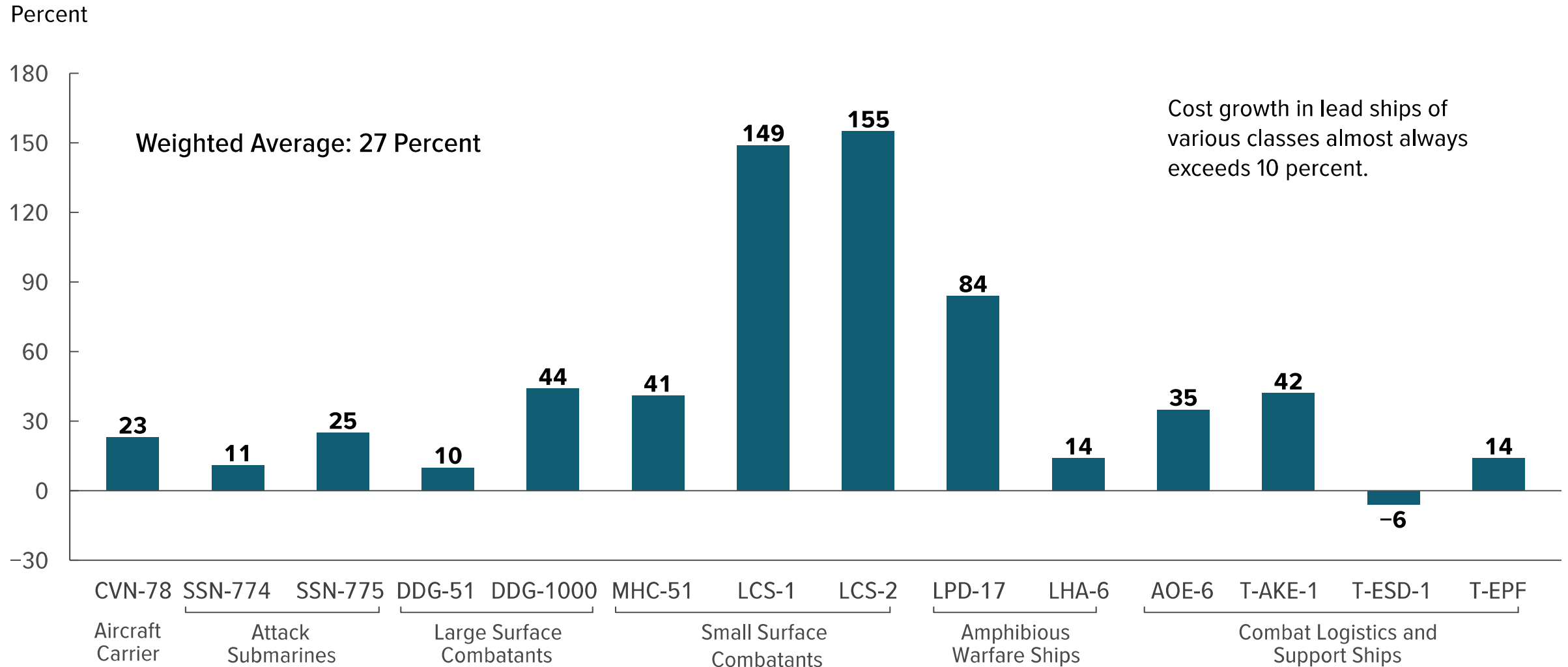


# Estimated Navy Topline Required to Build and Sustain a 355-Ship Fleet, 2021 to 2051



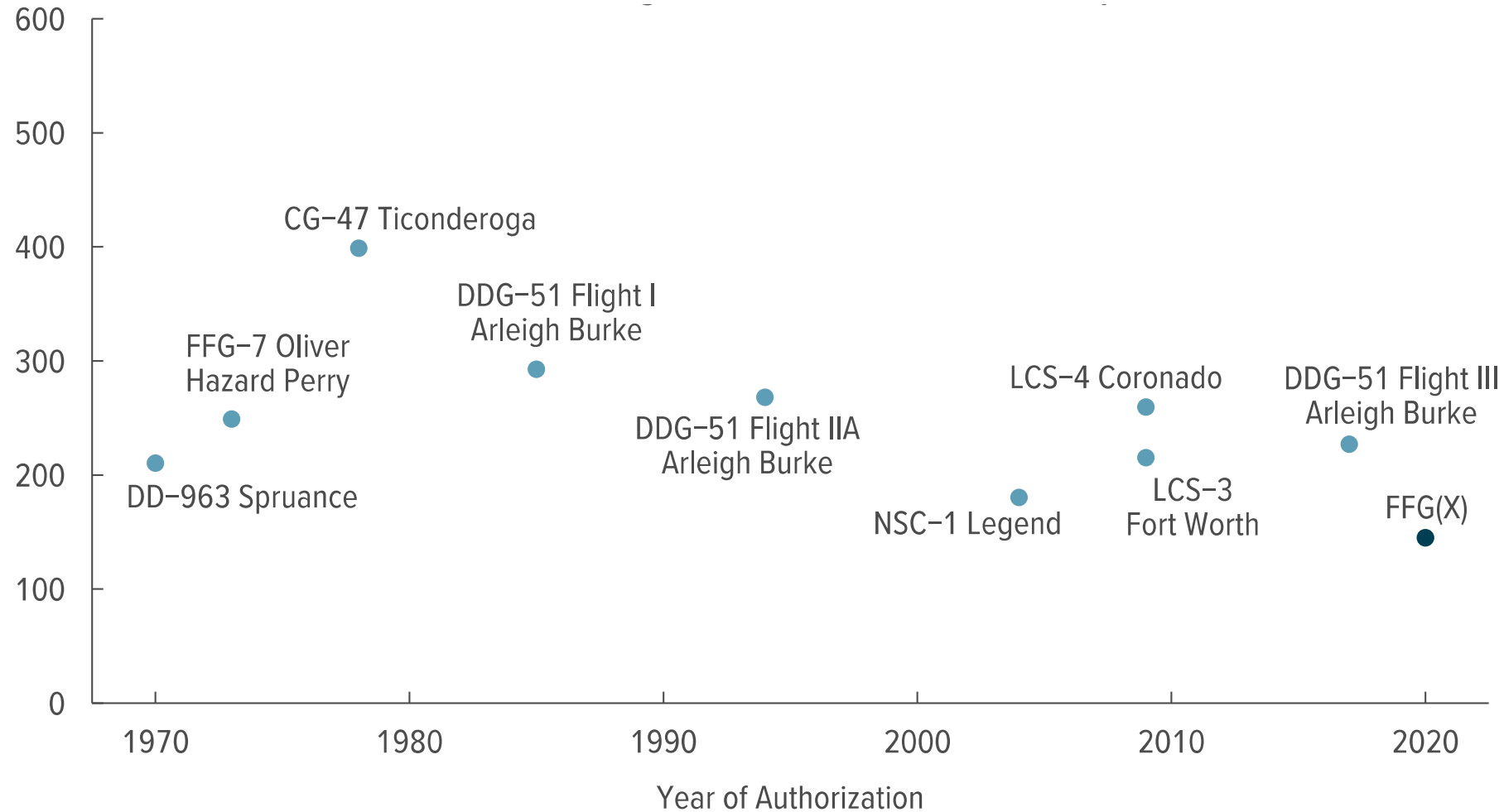
A larger fleet costs more to build and operate over time.

# Cost Growth on Lead Ships, 1985 to 2015



# Cost of the Navy's Surface Combatants per Thousand Tons of Lightship Displacement

Millions of 2020 Dollars



# Designing and Building New Ships

- Columbia Class Ballistic Missile Submarine
- Large Surface Combatant
- Future Attack Submarine: SSN(X)
- FFG-62 Constellation Class Frigate
- Future Small Surface Combatant
- Light Amphibious Warship
- Consol Oiler