

Navy Shipbuilding: Prospects for Building a Larger Fleet

January 15, 2021

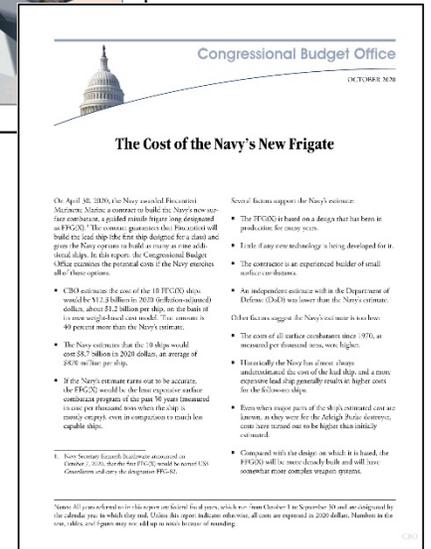
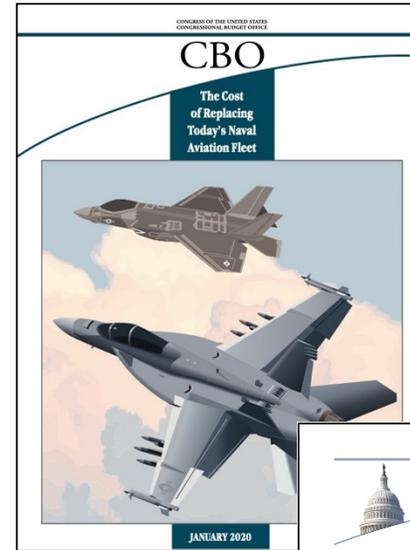
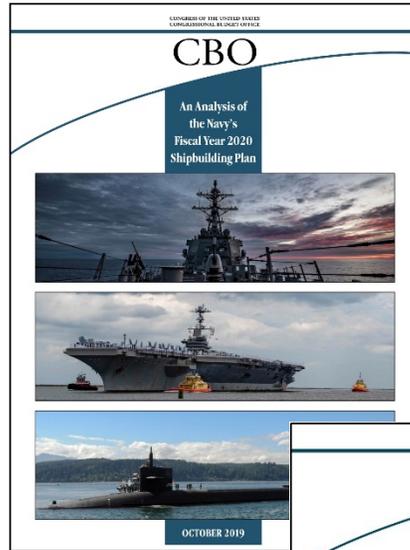
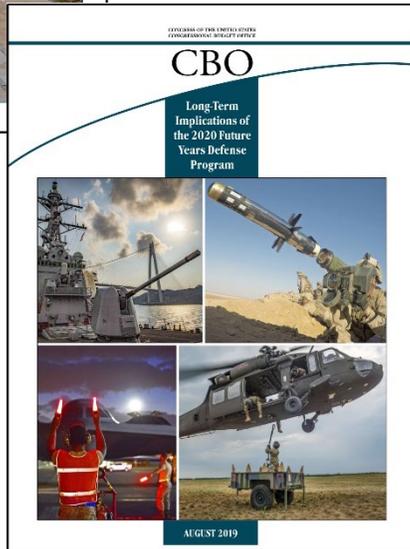
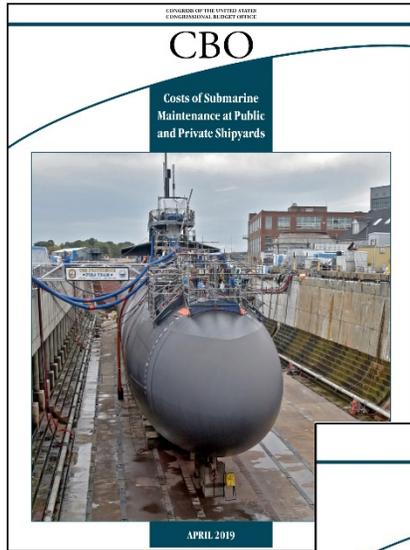
Presentation at the Surface Navy Association's 33rd Annual Symposium

Eric J. Labs

Senior Analyst for Naval Forces and Weapons

National Security Division

CBO's Relevant Reports



Prospects for Building a Larger Fleet

- The Navy's New Shipbuilding Plan
- The New Shipbuilding Plan in Historical Context
- The Challenges of Building a Larger Fleet



The Navy's New Shipbuilding Plan



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

Ship Type	2016 FSA Inventory Goals	FNFS Inventory Goals	Difference
Aircraft Carriers	12	8 to 11	-1 to -4
Light Carriers	0	0 to 6	0 to 6
Ballistic Missile Submarines	12	12	0
Attack and Large Payload Submarines	66	72 to 78	6 to 12
Large Surface Combatants	104	73 to 88	-16 to -31
Small Surface Combatants	52	60 to 67	8 to 15
Large Amphibious Warfare Ships	12	9 to 10	-2 to -3
Small Amphibious Warfare Ships	26	52 to 57	26 to 31
Logistics and Support Ships	71	96 to 117	25 to 46
Unmanned Surface Vehicles	n.a.	119 to 166	n.a.
Unmanned Underwater Vehicles	<u>n.a.</u>	<u>24 to 76</u>	<u>n.a.</u>
Total Manned Ships	355	382 to 446	27 to 91
Total Unmanned Systems	n.a.	143 to 242	n.a.
Total Manned and Unmanned	355	525 to 688	170 to 333

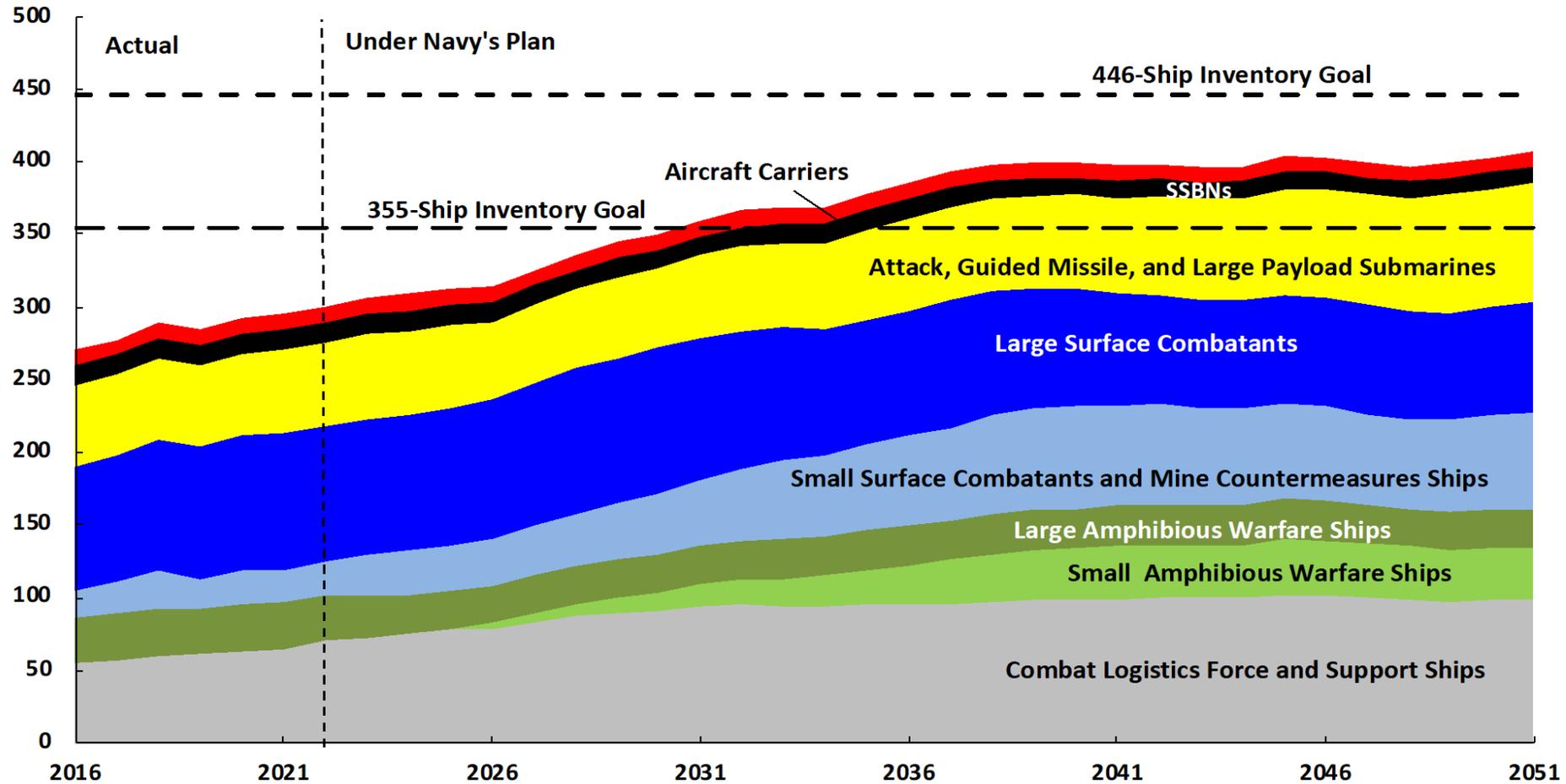
Ship Purchases Under the Navy's Fiscal Year 2020 and December 2020 Shipbuilding Plans

Ship Type	Fiscal Year 2020 Plan	December 2020 Plan	Difference
Aircraft Carriers	7	6	-1
Light Carriers	0	0	0
Ballistic Missile Submarines	12	11	-1
Attack and Large Payload Submarines	66	81	15
Large Surface Combatants	76	55	-21
Small Surface Combatants	58	76	18
Large Amphibious Warfare Ships	28	16	-12
Small Amphibious Warfare Ships	0	55	55
Logistics and Support Ships	57	104	47
Unmanned Surface Vehicles	n.a.	179	n.a.
Unmanned Underwater Vehicles	<u>n.a.</u>	<u>44</u>	<u>n.a.</u>
Total Manned Ships	304	404	100
Total Unmanned Systems	n.a.	223	n.a.
Total Manned and Unmanned	355	627	272



Manned Ships Under the Navy's December 2020 Plan

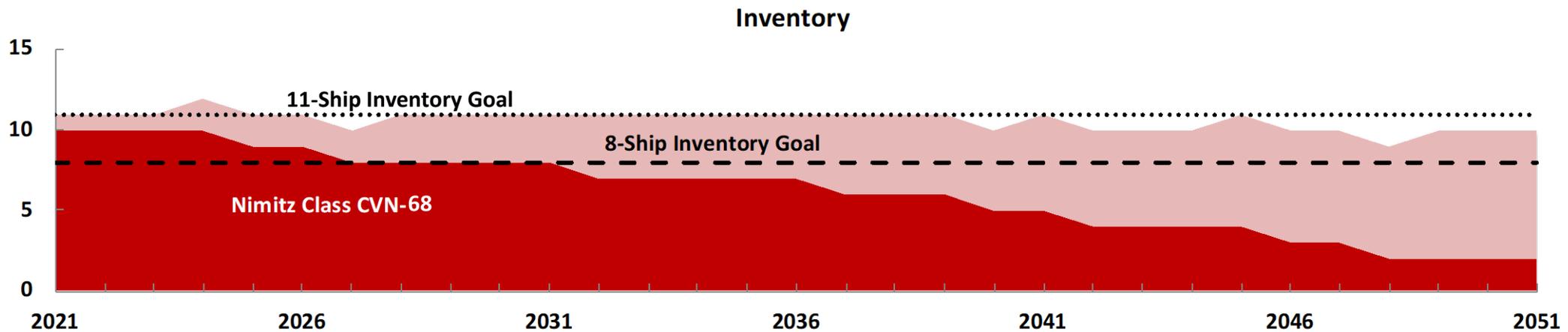
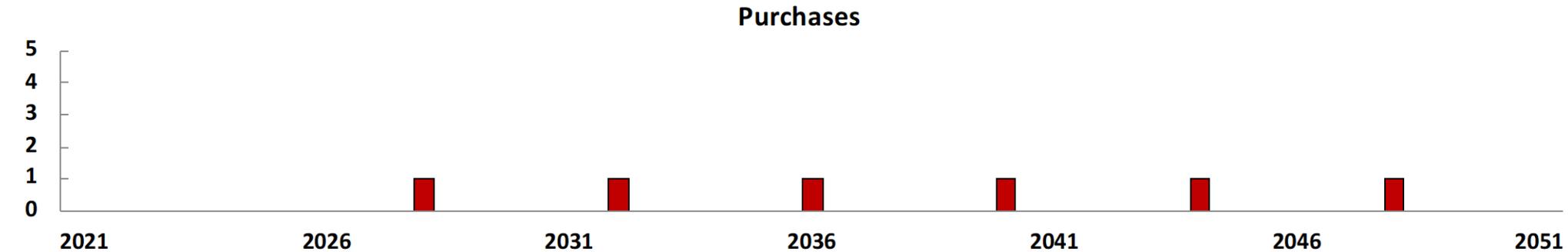
Number of Ships





Aircraft Carriers Under the Navy's December 2020 Plan

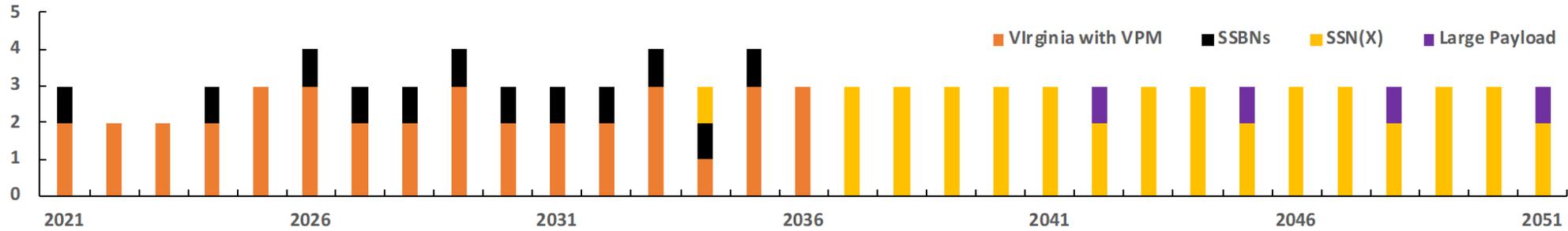
Number of Ships



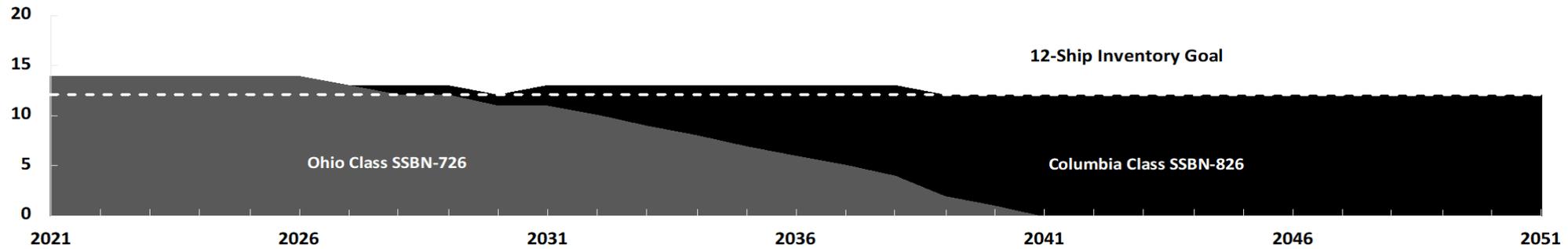
Submarines Under the Navy's December 2020 Plan

Number of Ships

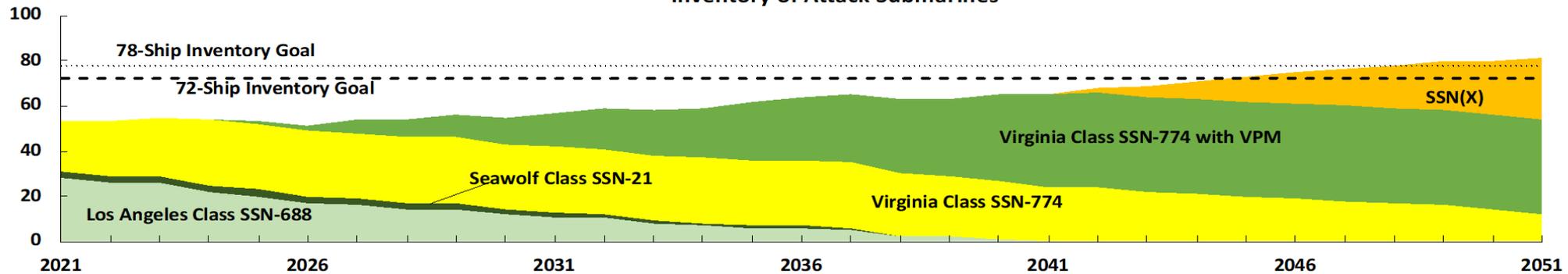
Purchases



Inventory of Strategic Ballistic Missile Submarines



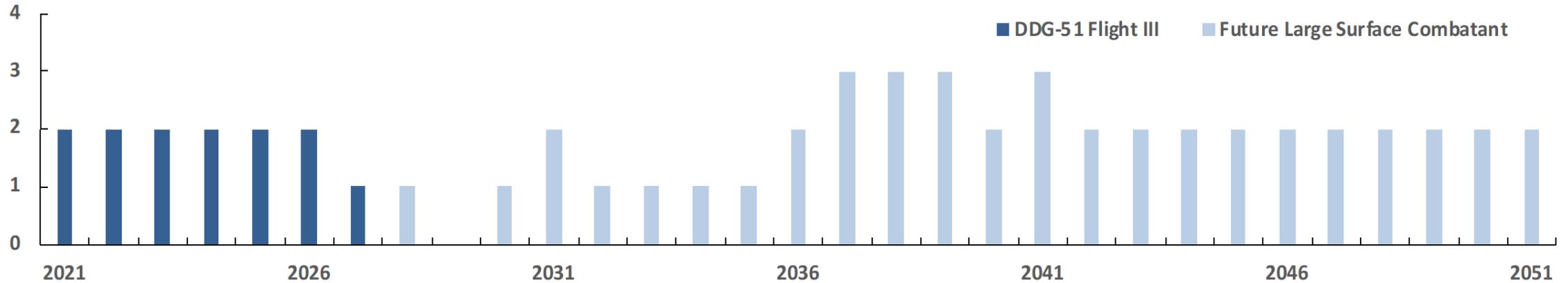
Inventory of Attack Submarines



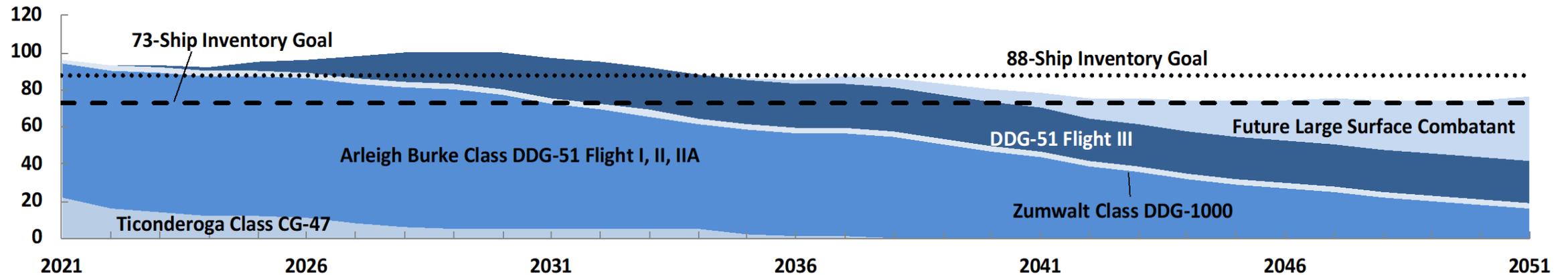
Large Surface Combatants Under the Navy's December 2020 Plan

Number of Ships

Purchases



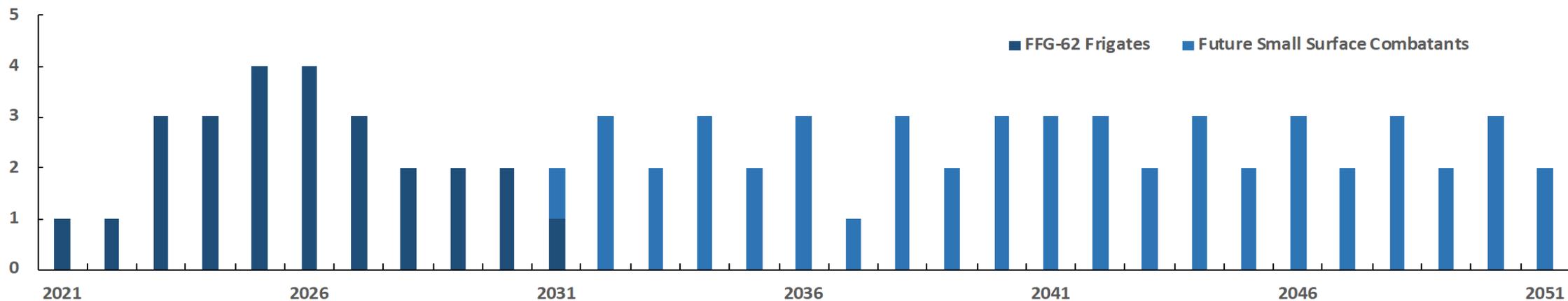
Inventory



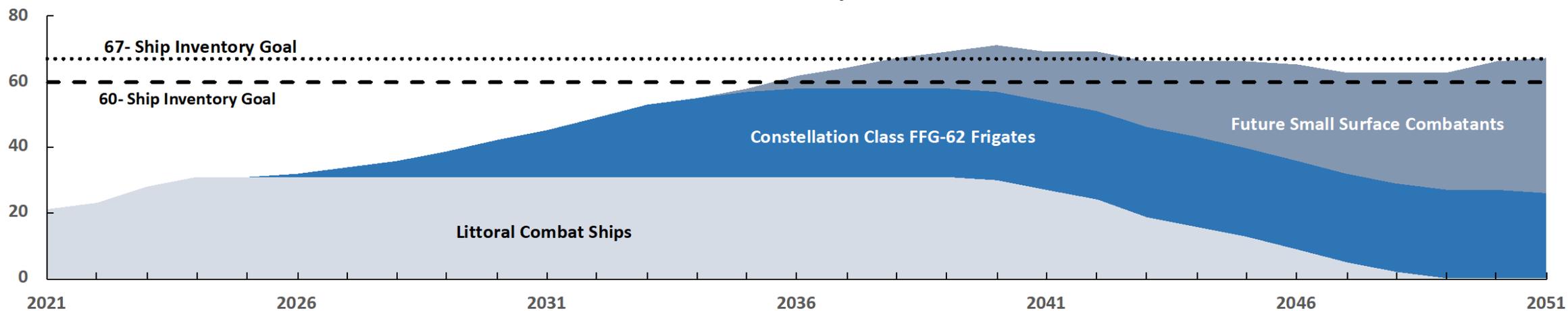
Small Surface Combatants Under the Navy's December 2020 Plan

Number of Ships

Purchases

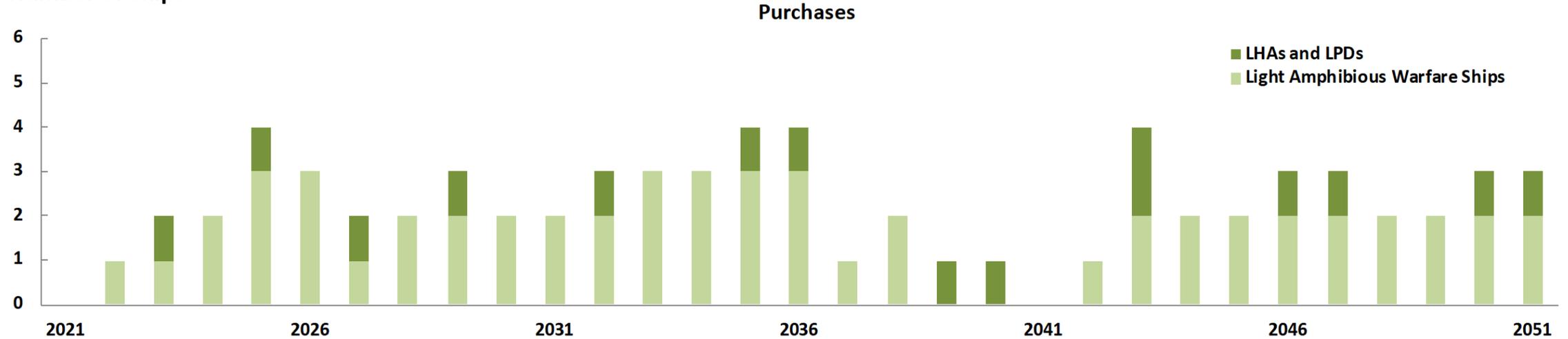


Inventory

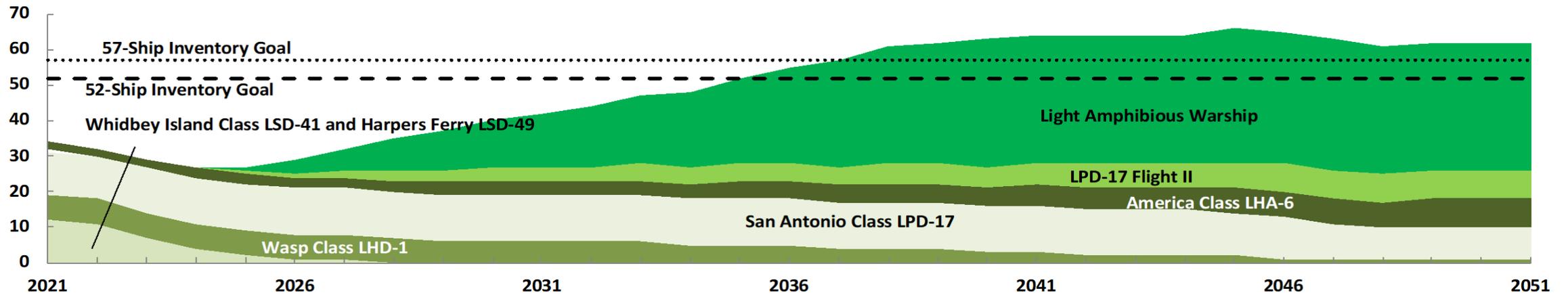


Amphibious Warfare Ships Under the Navy's December 2020 Plan

Number of Ships

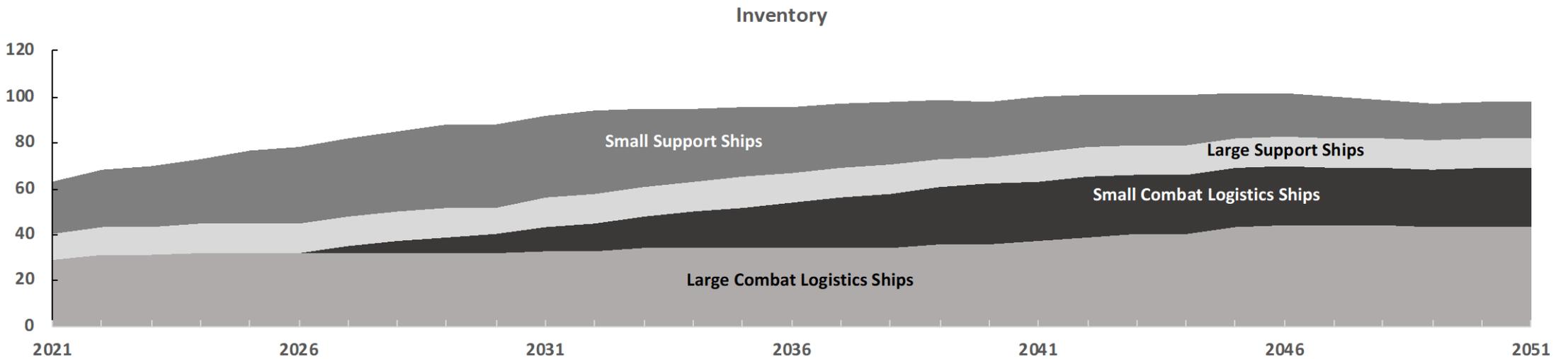
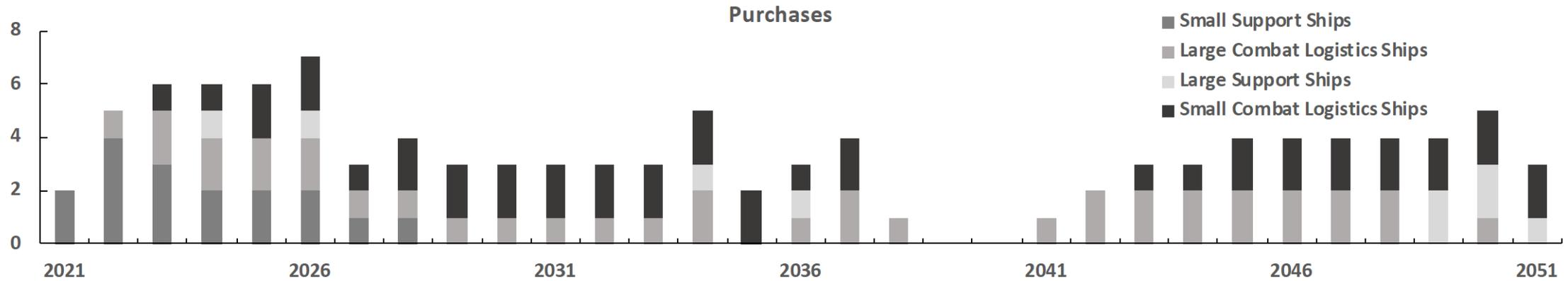


Inventory



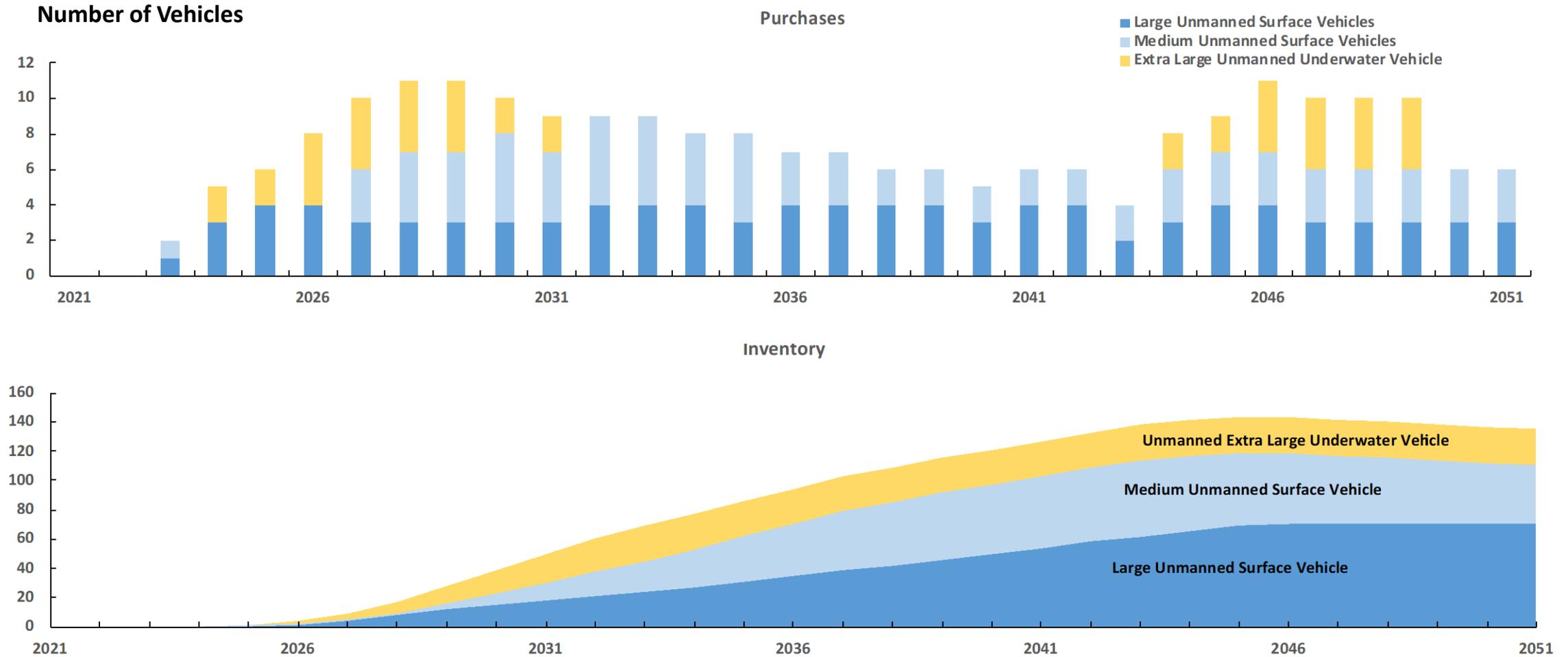
Combat Logistics and Support Ships Under the Navy's December 2020 Plan

Number of Ships



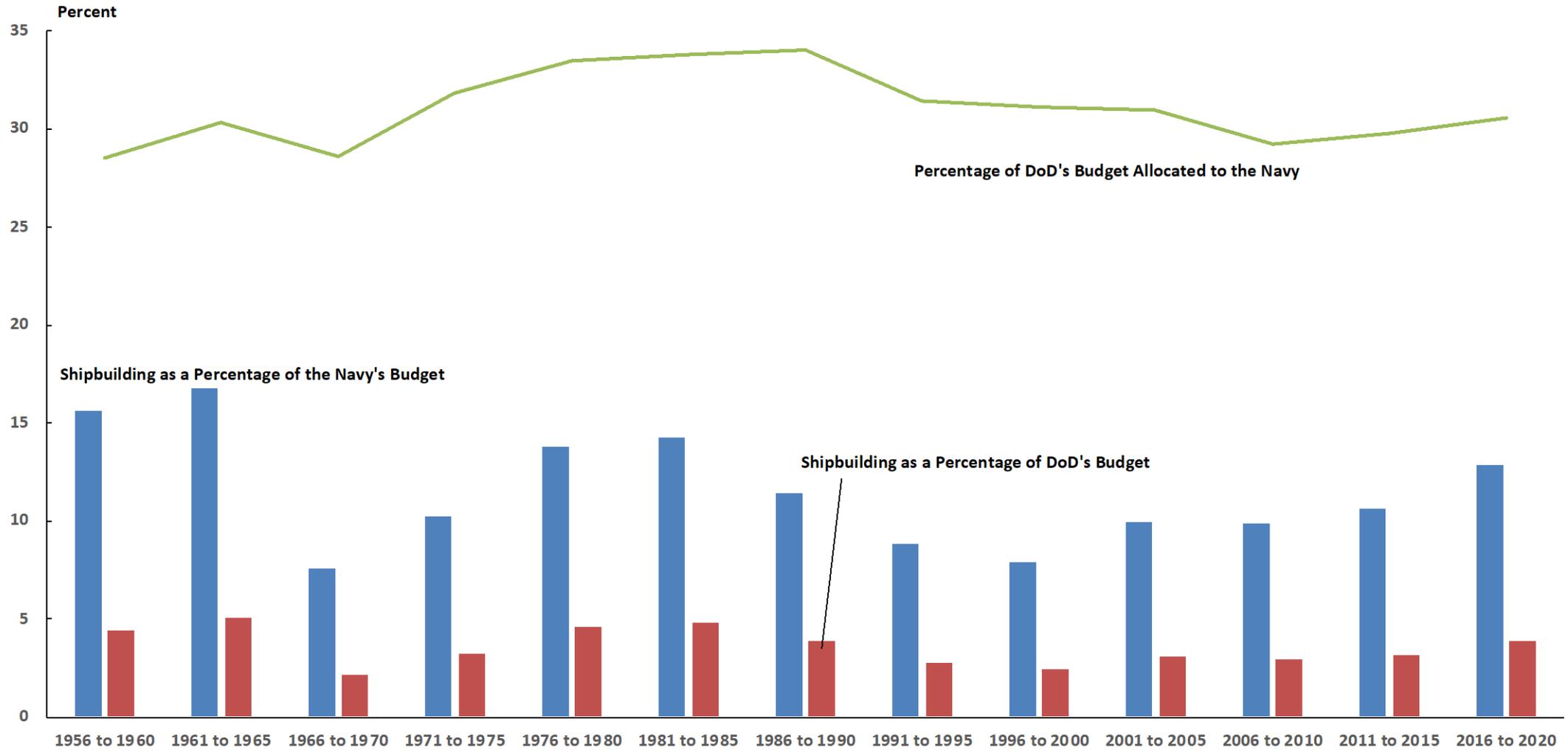


Unmanned Surface and Underwater Vehicles Under the Navy's December 2020 Plan

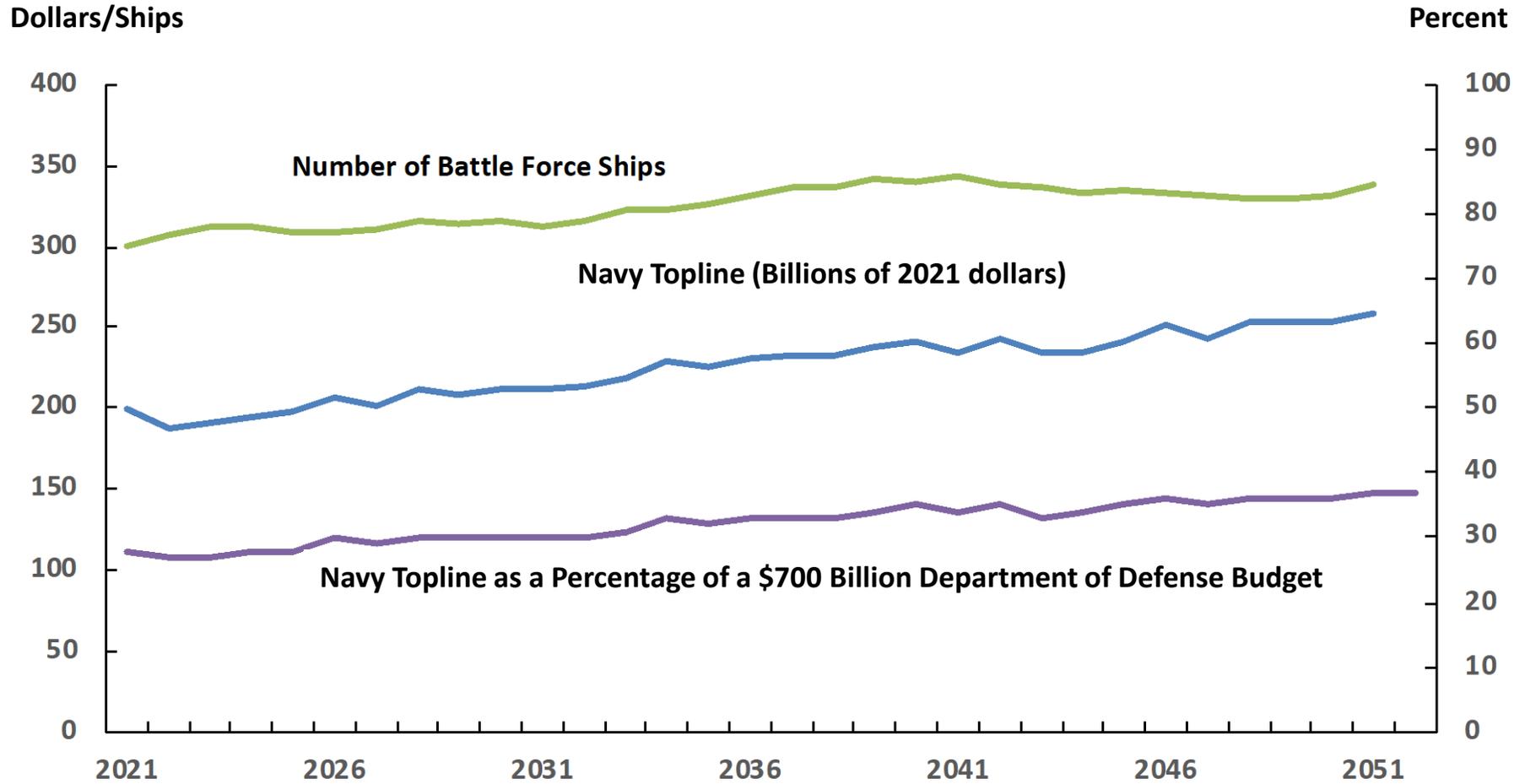


The New Shipbuilding Plan in Historical Context

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



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.



The Challenges of Building a Larger Fleet

The Challenges of Building a Larger Fleet

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

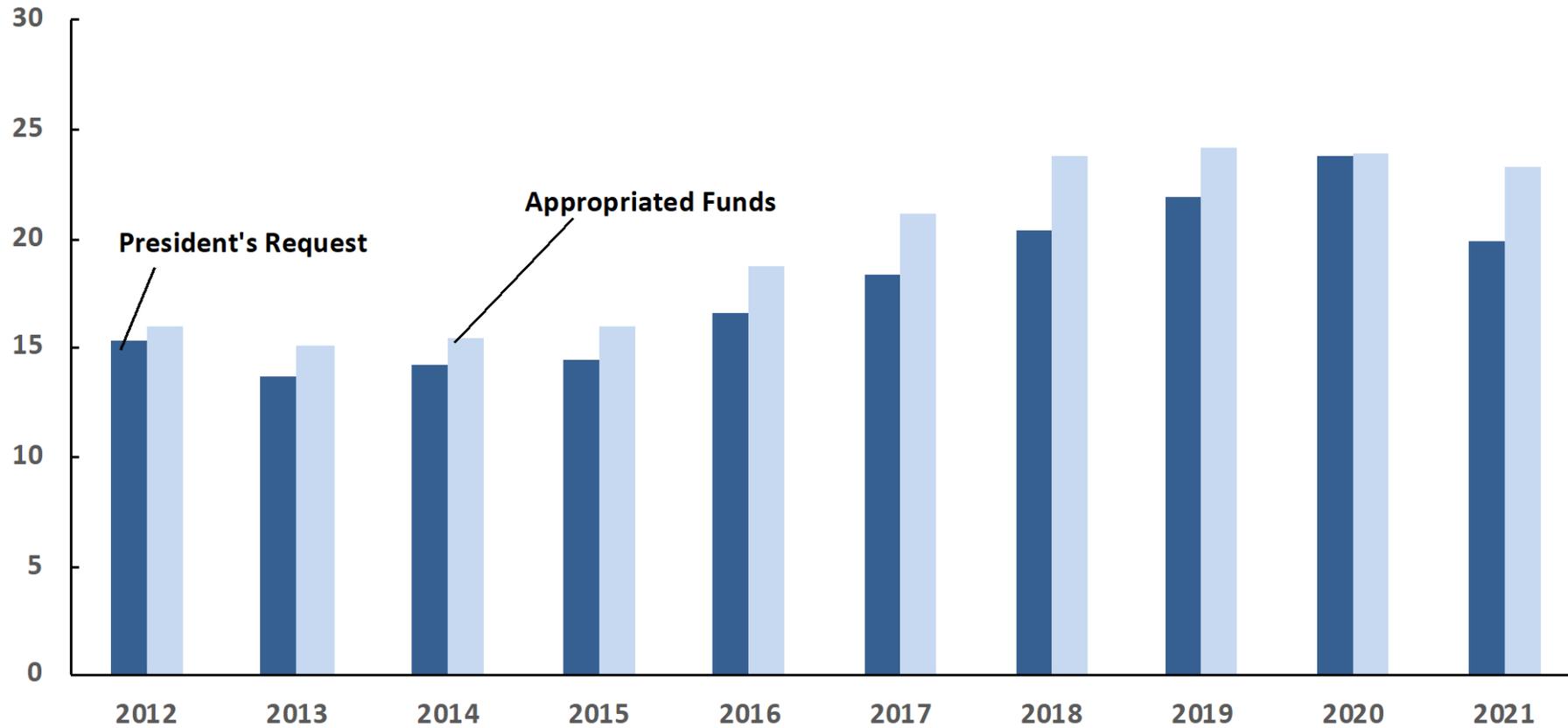
Illustrative Average Annual Steady-State Shipbuilding Costs Under the Navy's Future Naval Forces Study

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>
Total Manned Ships	382	446	n.a.	n.a.	24.3	31.0
Total Unmanned Systems	143	242	10	15	0.9	2.5
Total Steady-State New-Ship Construction	525	688	n.a.	n.a.	25.2	33.5
Total Steady-State Shipbuilding	525	688	n.a.	n.a.	27.2	35.5

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; n.a. = not applicable.

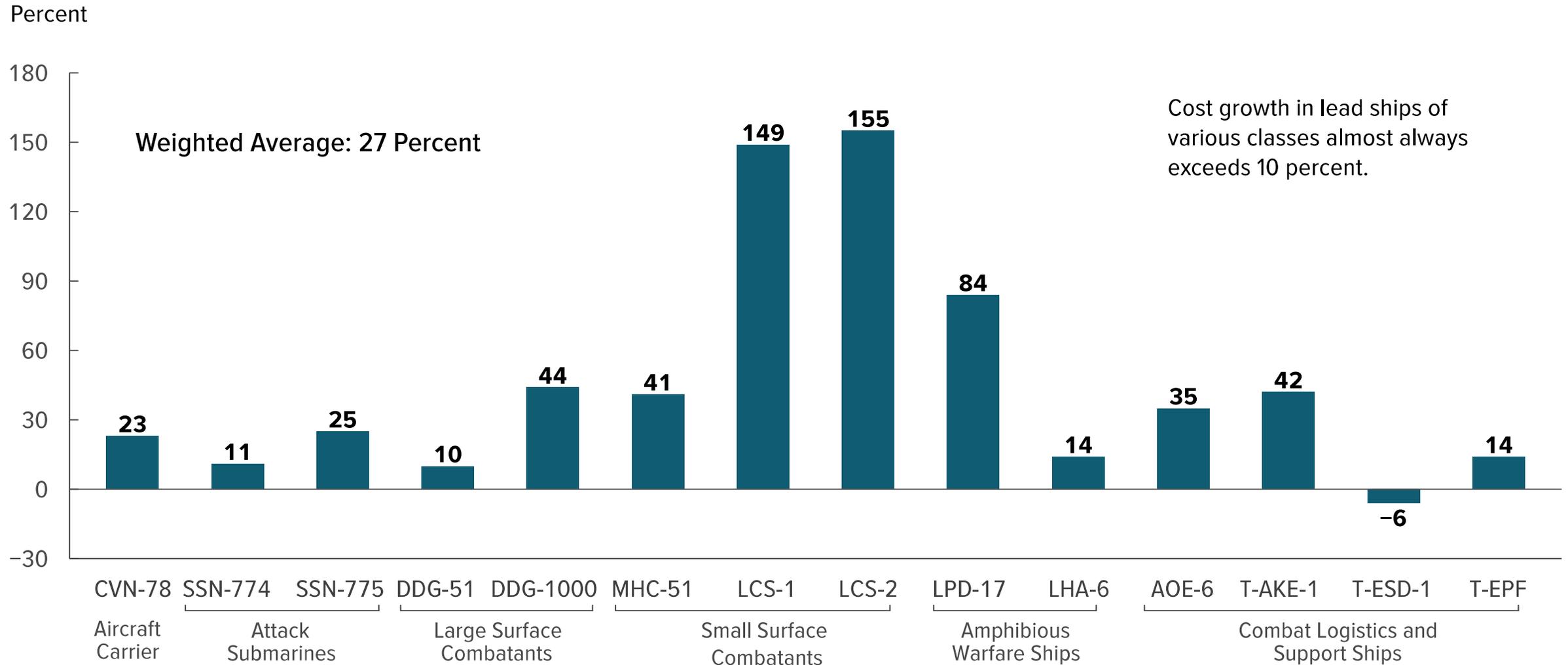
Requested and Appropriated Shipbuilding Budgets, 2012 to 2021

Billions of Dollars



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

Cost Growth on Lead Ships, 1985 to 2015



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



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

Millions of 2020 Dollars

