Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2023

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Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year (FY) 2023

I. Reporting Requirement

This report is submitted per Section 231 of Title 10, United States Code. Appendices 1 - 7 provide supporting details. Appendix 6 is controlled under limited distribution. Appendix 7 is classified and forwarded separately.

II. Submission of the Report

This report is the Department of the Navy's (DoN) 30-year shipbuilding plan for FY2023 through FY2052. The FY2023 President's Budget (PB2023) provides planned funding to procure the ships included in the FY2023-FY2027 Future Years Defense Program (FYDP). Per the FY2022 National Defense Authorization Act (NDAA), the certified expected service life of each vessel, disaggregated by ship class, is included in Appendix 4. Unless otherwise noted, funding levels are constant year (CY) FY2022 dollars.

III. Analytic Efforts Supporting Force Structure Requirements

This plan highlights the Navy's work in coordination with the Office of the Secretary of Defense (OSD) to build a modernized naval force that makes needed contributions to advance the Joint Force's ability to campaign effectively, deter aggression, and, if required, win decisively in combat. As detailed in the June 2021 Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels, the Department previously completed significant analytic work with the Integrated Naval Force Structure Assessment (INFSA) and the Future Naval Force Study (FNFS) in support of the 2018 NDS. For the ranges in the FY22 shipbuilding plan, the FNFS Future Fleet Architectures (FFAs) were adjusted for final analytic insights based on combat effectiveness, industrial base production feasibility, and no real budget growth. These previous analytic works are summarized in Table 1. The Department of the Navy, in coordination with the Department of Defense, will provide the Battle Force Ship Assessment and Requirement Report aligned to the FY2022 NDS, which will inform the FY2024 shipbuilding plan, in accordance with Section 8695 of Title 10, United States Code.

The Department continues to evaluate industrial base health and support to Fleet readiness, capacity, and capability. Timely industrial base delivery of systems and platforms within cost estimates is a key consideration as it quickly enhances warfighting performance. Improvements in today's production enable greater capability and capacity for developing future platforms, such as the future large surface combatant (DDG(X)) and the next generation attack submarine (SSN(X)). The DoN, working with industry partners, will deliberately reduce execution risk through improved cost estimation, prototyping, and land-based testing systems to de-risk critical technologies and ensure that new programs deliver on expected capabilities.

Table 1. Previous Analytic Efforts Completed

Platforms	2016 FSA	2020 INFSA	FNFS FFA Ranges	PB22 Jun 2021 Ranges
Time Frame	Post 2030	Post 2030	2045	2045
Aircraft Carrier	12	12	8-11[1]	9-11
CVL	0	0	0-6[2]	0
LHA/LHD	12	10	6-10	8-9
Amphibious Warfare Ships (less LHA/LHD)	26	41[3]	30-43[3]	40-54[3]
Large Surface Combatant	104	96	72-80	63-65
Small Surface Combatant	52	56	47-60	40-45
Attack Submarines / Large Payload Submarine	66	66	58-70	66-72
Ballistic Missile Submarines	12	12	12	12
Combat Logistics Force	32	45[4]	51-85[4]	56-75
Support Vessels	39	52	27-51	27-29
Unmanned Surface	0	27	81-153[5]	59-89
Unmanned Subsurface	0	18	18-50[5]	18-51
Battle Force	355	390[8]	337-404[6]	321-372[7]
Battle Force + Unmanned Surface	-	417	382-454[6]	380-461
Battle Force + Unmanned Surface + Unmanned Subsurface	-	435	440-540[6]	398-512

1. Lower range may be enabled by acquisition of cost-effective CVL.
2. Cost-effective CVL capabilities and capacity study would be required.
3. Includes future Light Amphibious Warships (LAW).
4. Includes Next Generation Logistics Ships (NGLS).
5. UxV require follow-on analysis of future objectives.
6. FNFS FFA force mix ranges are not the sum of low and high platform ranges listed above. FNFS ranges were derived from previous campaign analysis, however the ranges represented no real budget growth.
7. The PB22 shipbuilding ranges were the sum of the low and high platform ranges possible in 2045, which were derived from FNFS, and updated with analytic insights.
8. The INFSA reflects the most recent full campaign analysis and force structure assessment completed by the Department of the Navy.

The section below highlights key insights within each mission area or domain. Additional information including capability fielding timelines are provided in classified Appendix 7.

Subsurface

- Maintaining the undersea advantage is a priority for the Navy. As the Navy's most survivable strike platforms, SSNs and SSBNs are key to both deterrence and to win decisively in conflict. To meet the additional demand for submarines, the department increased submarine industrial base capacity investments by $2.4B over the FY2022-2026 program. We continue to evaluate the industrial base capacity required for more consistent delivery of two SSNs per year during *Columbia* serial production and subsequent potential increases to SSN procurement following *Columbia* serial production. Trade studies and technology development efforts have started for SSN(X) with planned lead boat construction in the mid-2030s.

Carrier Aviation

- Nuclear powered carriers (CVNs) and carrier air wings (CVWs), the Joint Force's most survivable and adaptable aviation basing option, provide sea control and power projection in contested battlespace, offering a uniquely valuable combination of

maneuver, operational reach, volume of fires, sustainability, and organic sensors. As the center of maritime crisis response, these platforms provide sustained striking power, flexibility, and adaptability for a range of missions, from humanitarian aid to full-scale combat. With the capability to deploy the broadest range of sea-based aviation coupled with the capacity to arrive ready to execute and remain on station, nuclear-powered aircraft carriers provide combatant commanders with an array of combat capabilities unmatched in the world. As with other surface platforms, maintaining the survivability of CVNs is a priority for the Navy.

Surface

- Large Surface Combatants, most notably DDG 51 Flt III and the planned DDG(X) transition starting around FY2030, directly support Distributed Maritime Operations (DMO) and are key to Sea Denial and Sea Control missions. Increased numbers of smaller multi-mission combatants, such as Constellation Class Frigates (FFG 62), enable more efficient distribution of missions across the surface fleet, freeing up the more capable DDGs for critical high-end missions. The 2019 Future Surface Combatant Force Analysis of Alternatives (AoA) and FNFS indicated that the increased capabilities provided by the DDG 51 Flt III and DDG(X), coupled with a multi-mission FFG and supported by a number of unmanned assets such as Large Unmanned Surface Vessel (LUSV) and Medium Unmanned Surface Vessel (MUSV), yield a more distributed and lethal force.

Amphibious Ships

- Amphibious warfare ships are one of the cornerstones of maritime crisis response. They persist forward and are globally deployable. A three-ship Amphibious Readiness Group (ARG) partnered with a Marine Expeditionary Unit (MEU) provides a geographic combatant commander with an array of missions across the spectrum of conflict and crisis response. Amphibious Warfare Ships, sized for one Amphibious Task Force / Marine Expeditionary Brigade (ATF/MEB) and modernized with Joint Forcible Entry Operations (JFEO) capabilities, also provide the ability for rapid aggregation at sea. The Light Amphibious Warship (LAW) program provides maneuver and mobility for Stand-In forces, active campaigning, and contributions to integrated deterrence. In aggregate, Naval Expeditionary Force (NEF) formations contribute to a partnered maritime defense in depth and facilitate an integrated kill chain in conflict.

Combat Logistics Force (CLF)

- Logistics forces, to include current dry cargo and ammunition ships (T-AKEs), traditional fleet oilers (T-AOs) and the newly planned smaller Next Generation Logistics Ships (NGLS), are key to the sustainability of the fleet and Fleet Marine Force during all phases of operations including combat. To support a larger, more distributed force, increased numbers of T-AOs and NGLS platforms improve resiliency of the logistics force. The final CLF force size and mix will continue to evolve pending the NGLS AoA and additional studies as discussed in Section VI. Sealift, as a logistics enabler for the Joint Force, is covered in additional detail in Appendix 5.

Support Vessels

- Support vessels include enabler ships such as fleet tugs, salvage and rescue ships, submarine tenders, command ships, ocean surveillance ships, and fast transports. New submarine tenders will be constructed to support the Navy's new SSNs and SSBNs. Additionally, a new program is initiated to replace and improve the existing T-AGOS

ocean surveillance ships. Given the flexibility inherent in fast transports, additional missions for the fast transport vessels are being evaluated.

Unmanned Platforms

- Unmanned platforms show significant potential to contribute to naval capabilities. MUSVs can add substantial, distributed, low-cost forward sensors and C2 nodes. LUSVs show promise as a distributed weapons payload capacity at an affordable cost with the potential to integrate future capabilities such as sensors and other larger mission packages. In the near term, LUSVs may operate as adjunct missile magazines teamed with larger manned multi-mission platforms to minimize technical risk and maximize survivability. Additionally, Extra Large Unmanned Undersea Vehicles (XLUUVs) will potentially have the capability to deliver multiple payloads at extended ranges. Finally, multiple smaller USVs are being evaluated for various logistics missions and are also in production to support mine countermeasures missions.
- The Navy remains committed to actively testing concept of operations (CONOPS) and employment of these platforms to iteratively assess and fully develop their capabilities in a practical and realistic manner. USV program development is accomplished through land-based testing and at sea prototyping efforts. Platform development and subsystem technical maturation is following a Systems Engineering Framework approach across six lines of effort: reliable hull, mechanical and electrical (HM&E) systems; automated communications systems; integrated combat system; common control system; sensory perception and autonomy; platform and payload prototyping.

In summary, new production platforms, such as unmanned systems, NGLS, and LAW have great potential but also have developmental risk. The wider objective FNFS range shown in Table 1 for those platforms reflects this risk. As prototyping and experimentation retire technical and CONOPS uncertainty, coupled with higher fidelity cost models, we expect that the objective force ranges will narrow.

IV. Plan Objectives – Priorities, Fiscal Environment and Force Structure Adjustments

In order to deliver a ready and lethal Navy within available resources, the Navy has utilized a consistent process with steady priorities in budget submissions since PB2019. The priorities used are:

- Prioritize recapitalization of the SSBN fleet with the *Columbia* class SSBN
- Prioritize readiness to deliver a combat-credible forward force in the near-term
- Invest in increased lethality/modernization with the greatest potential to deliver non-linear warfighting advantages against China and Russia in mid-to-far-term
- Grow warfighting capacity aligned to the analytic work in Table 1. As stated in Section III, the warfighting requirement will be updated based on, and thus reflective of, the 2022 NDS which will inform the FY2024 shipbuilding plan.

The once in a generation recapitalization of the Nation's most survivable leg of the nuclear triad comes at the same time as the Navy modernizes for future threats, placing strain across the Navy's budget. The Navy will only grow ready, lethal, and survivable warfighting capacity at a rate supported by the fiscal guidance and our ability to sustain that capacity in the

future.

This plan does not resource capacity beyond what can be reasonably sustained – manning, training, maintenance, ordnance, operations, and future modernization. However, some risk was accepted in ship maintenance and readiness accounts. Although relatively small, any shortfall in maintenance will be realized as additional cost in the out years with growth above what is not funded in the current year. Assuming no real budget growth, the two low ranges of the plan do not procure all platforms at the desired rate (e.g., DDGs, SSNs and FFGs at two ships per year), which industry needs to demonstrate the ability to achieve, but do maximize capability within projected resources, industrial factors, and technology constraints to build the most capable force. Overall, this approach accepts risk in capacity in order to field a more capable and ready force.

PB2023 also includes difficult decisions to decommission 11 additional in-service platforms in FY2023 beyond the 13 ship reductions planned in previous budget cycles, for a total of 24 ships in FY2023. This decision frees up additional resources for shipbuilding and other priorities including manpower requirements. These include:

- 5 Guided Missile Cruisers (CG) - The Department of the Navy's assessment is the Department is better supported by investing in warfighting readiness, capabilities or capacity other than those of these legacy platforms. CGs have been the Navy's premier air defense command and control platforms for over three decades and this mission is now transitioning to Flight III DDGs. CGs on average are 35 years old and there would be little return on investment in maintaining these ships given their poor reliability, affordability, and lethality. The ships have a large vertical launch capacity; however, the substantial cost of repairing the poor material condition of these ships due to their age, and ongoing concerns with overall legacy sensor, and HM&E system reliability, outweighs the potential warfighting contributions of these platforms over their limited remaining service life.
- 9 Littoral Combat Ships (LCS) – PB2023 focuses the LCS class on mine countermeasures (MCM) and surface warfare (SUW), eliminating the anti-submarine warfare (ASW) mission for the class. Fifteen Independence Class LCSs are dedicated to MCM, and 6 Freedom Class LCS will be dedicated to SUW. The ASW Mission Package (MP) is no longer being pursued due to technical challenges, and the forthcoming introduction of FFG 62 as a highly capable ASW platform. Consequently, eight Freedom Class ships are planned for decommissioning in FY2023 which correlate with the 8 ASW MPs. LCS 3 is also decommissioned as it remains a non-deploying test ship that is no longer needed given the termination of the ASW MP. Continued retention of this ship imposes significant cost to upgrade it to a common configuration (including HM&E, structural, cooling and other upgrades) and capability with the rest of the Fleet. Decommissioning allows for investments in higher priority capability and capacity.
- 4 Dock Landing Ships (LSD) – The Department of the Navy's assessment is the Department is best supported by investing in warfighting readiness, capabilities, or capacity other than these legacy platforms. These legacy ships are in poor material condition due to their age and require significant resources to continue to maintain and operate. Shifting resources to other capabilities better supports the amphibious fleet, and provides more operational capability to the Navy and Marine Corps.

Appendix 1 summarizes PB2023 FYDP funding for ship construction (Shipbuilding and Conversion, Navy – SCN) and illustrates the acquisition, delivery, retirement, and inventory over the next 30 years under three scenarios, two reflecting a budget with no real growth and one reflecting a budget with additional resources beyond the FYDP. Each scenario assumes industry eliminates excess construction backlog and produces future ships on time and within budget. Evolving operational concepts and rapid technological changes make single-point predictions after approximately 10 years unreliable. Accordingly, Appendix 1 highlights a potential range of options for key fleet platforms beyond 10 years. As the Administration works with Congress to refine future years' plans, the composition and ramp-up of battle force procurement beyond FY2028 will be adjusted accordingly. Consistent with the FY2022 shipbuilding plan approach, combat effectiveness and industrial base production feasibility were taken into account.

Appendix 2 depicts costs for three battle force ship ranges outside the FYDP consistent with Appendix 1. At the low end of the ranges (i.e., no real growth budget), the modest increase in the two battle force options beyond the FYDP is a result of two new programs: LAW and NGLS. These smaller ships are critical enablers of the USMC Force Design and DMO, but do not bring the same level of global, multi-mission responsiveness as their larger and more capable counterparts. The higher range would require additional prioritization in ship procurement funding to better reflect the analytic work depicted in Table 1. As previously stated, the Navy will maintain readiness of the Fleet to avoid the possibility of a hollow force. Predicted sustainment costs for this force are detailed in Appendix 3.

V. PB2023 Shipbuilding Plan FYDP Overview

The PB2023 shipbuilding plan includes procurement of 9 manned ships in FY2023 and 51 manned battle force ships within the FYDP. Based on the corresponding projected funding levels in the FYDP, the battle force inventory will be 280 manned ships by FY2027. Without real budget growth, the two low range options achieve 305-307 manned ships in FY2035, and ultimately 318-322 manned ships in FY2045. The higher range achieves 326 manned ships in the mid-2030s, and ultimately 363 manned ships in FY2045. The above inventory levels are traditional manned battle force ships. In addition, unmanned platforms will achieve 89-149 platforms in FY2045 without real budget growth. Future force levels will be adjusted as the capabilities of unmanned platforms develop and are integrated into the battle force.

Full FYDP details of the FY2023 shipbuilding plan are in Appendix 1.

VI. The Future Navy Fleet to Support Distributed Maritime Operations (DMO)

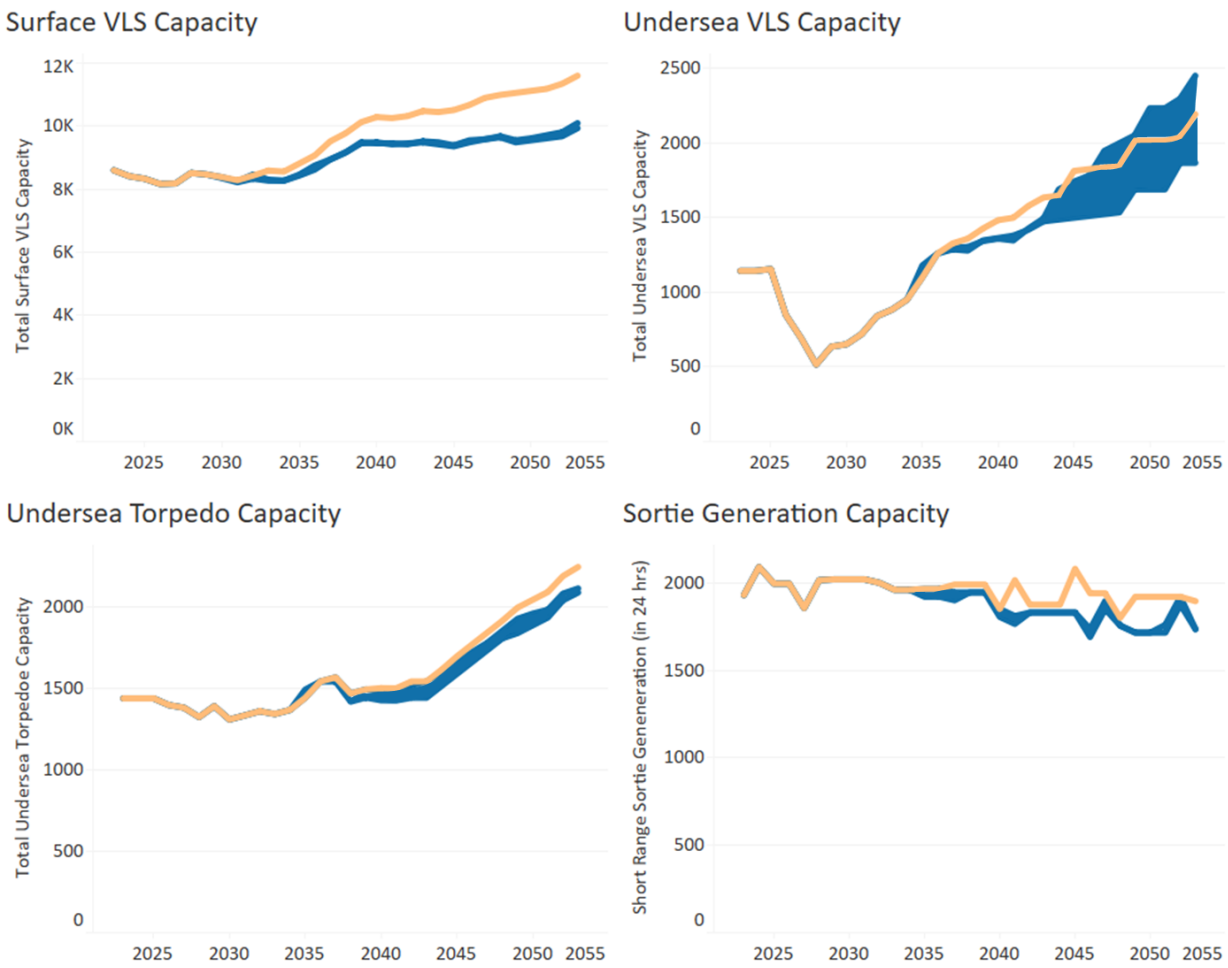
The concepts of DMO and Littoral Operations in a Contested Environment (LOCE) / Expeditionary Advanced Base Operations (EABO) require a balanced and different mix of traditional battle force ships as well as new unmanned, amphibious, and logistic platforms. Previous warfighting analysis validated that a progressive evolution of existing platforms combined with revolutionary introduction of new technologies results in a more survivable and more lethal force than previous force structures. The Department is committed to continually analyzing, testing, and experimenting with novel concepts and capabilities to ensure they will provide an optimal mix of capability to the warfighters of tomorrow.

DMO addresses challenges to sea control and access in contested and "informationalized" environments. This concept describes required capabilities to execute DMO with massed effects. DMO provides the intellectual framework necessary to evolve our fleet to meet the challenges of the future.

To realize these concepts, the Department continues to experiment and analyze a range of solutions to provide lethal capability for sea control and power projection within the framework of DMO. Study areas include, but are not limited to, aircraft carrier force structure, DDG(X), SSN(X), NGLS, amphibious ship mix, and expanded missions for unmanned platforms. This analysis and experimentation, in support of warfighting concepts, is informed by operationally relevant metrics including, but not limited to, capacity, lethality, survivability, operational reach, and affordability. While many of the operationally-informed metrics are classified, Figure 1 shows four unclassified metrics associated with key naval platforms.

The metrics in Figure 1 below highlight the capacity of potential future fleets to generate aircraft sorties, carry Vertical Launch System (VLS) tubes in surface or undersea platforms, and employ undersea torpedoes. The shaded areas within each graph represents the potential trade space in the first two profiles of Table A1-5 within each of the platform types. The gold line on the graph represents the additional warfighting capacity gained by pursuing the third profile in Table A1-5. Procurement pace and volume of platforms will evolve based on technological maturation, operating concepts, threat projections and industrial base capacity.

Figure 1. Key Naval Platform Metrics



Appendix 7 contains additional classified detail on select platforms and metrics, as

well as how those metrics compare with intelligence estimates of our primary strategic competitor.

VII. Unmanned Campaign Framework

The DoN released the Unmanned Campaign Framework and chartered the Unmanned Task Force to innovate and adapt new technology with which to build a more lethal and distributed naval force. To compete and win in an era of strategic competition, the Department is committed to investing in advanced autonomy; highly reliable HM&E systems; networks; and enabling systems to create true integrated human-machine teaming across the fleet. The Navy initiated "Project Overmatch" in support of this effort. As these systems advance in capability, they will become key supporting elements through all phases of warfare and in all warfare domains.

The Navy is accelerating the fielding of a full spectrum of unmanned capabilities. These systems are included in wargames, exercises, fleet battle problems, and limited real-world operations to derive employment plans and concepts of operation. Unmanned systems are funded in the Navy's research and development investments and accounted for in detail in each warfare domain's classified Capability Evolution Plan. Learning from land-based testing and functional prototypes will support continued refinement of platform requirements, technical maturation, capabilities development, and procurement profiles.

VIII. Industrial Base

The Navy's new construction and repair industrial base builds the Future Fleet and sustains today's Fleet. Sustaining and growing this vital shipbuilding base is a national security imperative that both energizes and challenges the Navy and the Nation. Strategic guidance and priorities, particularly as they affect the composition and size of the shipbuilding account, strongly influence the plans across the shipbuilding plan horizon. Nevertheless, over many decades, the foundation of a healthy shipbuilding base remains the Navy's commitment to stable, executable acquisition profiles that promote development and retention of highly-skilled workforces and investment in world-class manufacturing and shipbuilding facilities while maintaining a proper return on investment.

Within the overall industrial base, including both shipyards and suppliers, varying levels of capacity and risk exist. Nuclear powered ship production, a unique capacity with little to no opportunity for commercial or dual use production, is provided by two private shipyards that are currently facilitized and certified to construct nuclear powered ships and will be at capacity for the next 15 years building *Columbia* class SSBNs, *Virginia* class SSNs, next generation SSNs, and *Ford* class CVNs. The PB2023 request included additional industrial base funding to reduce the production risk, stabilize the more than 350 critical suppliers, and help enable recruitment and retention of the skilled production workforce. The non-nuclear shipbuilding industrial base that produces surface combatants, amphibious ships, combat logistics, and support vessels, while recovering from a number of perturbations, has the capacity to meet the force structure ranges of this plan. The Navy is working with these shipbuilders to manage platform transitions and facilitate the use of excess capacity to support the nuclear powered shipbuilding programs. Furthermore, the unmanned surface and undersea vessels described in this plan can be supported by the existing shipbuilding industrial base, providing opportunities for existing shipyards, existing boat and craft builders, and the potential for new entrants.

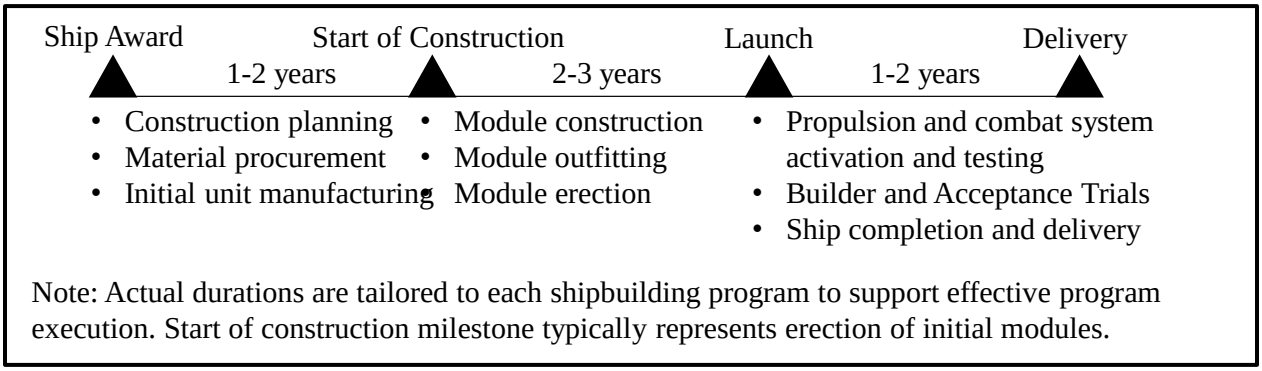
This shipbuilding plan assumes resource levels that are relatively steady or moderately

grow through-out the 30 year plan as shown in Appendix 2. Reduced procurement levels, inefficient profiles, and production gaps that could impact specific portions of the shipbuilding industrial base are sources of potential risk. The Navy is mindful that as fleet composition evolves to meet warfighting requirements, alternative opportunities for the industrial base must be examined. These opportunities include adjusting procurement profiles to mitigate "peaks and valleys" beyond the FYDP, as possible, and ensuring ample competitive opportunities for current and future platforms (i.e., T-AGOS 25, AS(X), LAW, NGLS, and a potential FFG 62 second source for construction when appropriate). These opportunities allow the industrial base to adapt while maintaining the capacity to deliver the capability the nation needs.

To summarize the more complete explanation provided in previous reports, and to keep a clear eye on historical context, the "boom and bust" profiles of the last 60-plus years resulted in sharp peaks followed by significant valleys, and sometimes breaks, in production. The trends provided by recent shipbuilding plans provided insight into why workforce experience and efficiency has become more difficult to reconstitute, and how that fundamentally contributed to longer, more expensive shipbuilding timelines. The buildup in the 1950s and 1980s, followed by "bust" periods of little production, each led to the loss of portions of our shipbuilding industrial capacity. The "boom" periods also led to large-scale block obsolescence as types/classes of ships reached (or will reach) the end of their service lives simultaneously, ultimately driving the need for another "boom" to recover. Given projected funding levels, the ability to recapitalize older ships with new ones is constrained resulting in transient decreases in overall inventory in some platforms. We are at a level of fragility in the supplier base, amplified by COVID impacts, such that without consistent and continuous commitment to steady and executable acquisition profiles the industrial base will continue to struggle and some elements may not recover from another "boom/bust" cycle.

The Navy appreciates that industry requires consistency in work orders under contract, or "backlog", to invest in the facilities, capital equipment, workforce and processes to deliver affordable ships at rate. During the 1-2 years between contract funding and the formal start of the construction milestone, shipbuilders order long lead time material from suppliers, develop and update construction build plans, and start steel cutting and early component fabrication that enable an optimized and efficient production flow once formal construction starts (reflected in Figure 2).

Figure 2. Notional Contract Award to Delivery Timeline



Note: Actual durations are tailored to each shipbuilding program to support effective program execution. Start of construction milestone typically represents erection of initial modules.

Congress has been a great partner in supporting the industrial base and the Navy greatly appreciates this commitment to shipbuilding. Congress has consistently appropriated funding in support of increasing industry capacity and supplier health. The PB2023 budget provides $2.4B

to support a generational increase in demand and includes supplier development, ship builder/supplier infrastructure, workforce development, technology advances, and strategic sourcing of the submarine industrial base. The Navy will continue to collaborate with industry to execute this funding and continue to collaborate with Congress and industry on strategies to positively affect shipbuilding base health.

IX. Summary

The new era of strategic competition requires a larger modernized, capable, globally deployed, forward, and lethal multi-domain Navy. Difficult choices must be made to ensure that the Navy best meets Joint Force operational requirements. These choices include divesting ships that provide less relevant capability to our pacing threat warfighting requirements. It also requires prioritizing promising technologies that need to be fielded quickly and at scale to be operationally relevant in the coming years. Careful prioritization in the near-term, in accordance with the Interim National Security Strategic Guidance and the 2022 NDS, will result in a Navy battle force that is more ready, sustainable, and lethal.

Appendix 1

PB2023 Shipbuilding Plan (FY2023-FY2027)

Table A1-1 includes the President's Budget (PB2023) funding for the Future Years Defense Program (FYDP) portion of the 30-yr shipbuilding plan.

Table A1-1 PB2023 FYDP funding for New Construction Battle Force Ship Building and Conversion Navy (SCN)

	FY2023		FY2024		FY2025		FY2026		FY2027		FYDP	
Ship Type ($M)	**$**	**Qty**	**$**	**Qty**	**$**	**Qty**	**$**	**Qty**	**$**	**Qty**	**$**	**Qty**
CVN 78[1]	2,534		1,894		3,051		3,118		3,846		14,443	
DDG 51	4,995	2	4,259	2	4,221	2	4,264	2	4,292	2	22,031	10
FFG 62	1,160	1	1,976	2	1,047	1	1,896	2	1,041	1	7,120	7
SSN 774	6,560	2	8,335	2	8,747	2	7,778	2	7,516	2	38,936	10
SSBN 826[2]	5,858		5,815	1	7,223		8,477	1	8,955	1	36,328	3
LPD Flt II	1,673	1									1,673	1
LHA(R)[3]	1,085	1	1,535								2,620	1
LSM (Light Amphibious Warship)					247	1	203	1	290	2	740	4
T-AO 205	795	1	1,358	2	733	1	747	1	764	1	4,397	6
T-AOL (Next Gen Logistics Ship)							150	1	156	1	306	2
T-ATS 6	96	1									96	1
T-AGOS 25					434	1	817	2	415	1	1,666	4
AS(X)[4]					1,174	1	1,233	1			2,407	2
Total New Construction[5]	**24,756**	**9**	**25,172**	**9**	**26,877**	**9**	**28,683**	**13**	**27,275**	**11**	**132,763**	**51**

Notes:

1. Funding reflects the two-CVN procurement for CVN 80 and CVN 81 and Advance Procurement (AP) for CVN 82 in FY2026 and FY2027. A decision on CVN 82/83 two-ship buy is NLT FY25.
2. FY2023 includes the last year of incremental full funding for the lead ship and FY2024-25 represents incremental full funding for the 2nd ship and the first year of AP for the 3rd ship. Funding in FY2026 and FY2027 is for the first two serial production ships. Other funding shown is AP and economic order quantity funding for multiple ships.
3. Reflects incremental procurement funding in FY2023 and FY2024 to support LHA 9 construction start in FY2023.
4. New ships planned for future procurement or for replacement of legacy ships are annotated with (X) until their class has been named, such as AS(X).
5. Funding for sustainment (maintenance, personnel, operations, etc.) is in addition to funding for shipbuilding (SCN), and is phased with delivery of battle force ships within the FYDP.

Notable FYDP procurement activity in the PB2023 budget submission includes:

- Continues funding the lead *Columbia* class SSBN appropriated in FY2021, the second in FY2024, and serial production of one SSBN per year beginning in FY2026.
- Continues to meet full funding requirements for CVN 80 and CVN 81 and AP funding for CVN 82 in FY2026 and FY2027.
- Completes funding for *Virginia* class Block V procurement in FY2023 with 2 submarines. Funds 8 *Virginia* class Block VI submarines in the FYDP to support multi-year procurement of ten SSNs from FY2024 to FY2028. The DoN is closely monitoring the submarine construction program while building two Virginia payload

module SSNs and the *Columbia* class SSBN program moving into serial production in FY2026. Additionally, $2.4B is added across the FYDP to increase capacity in the submarine industrial base, as this production rate will require significantly increased and sustained shipbuilding performance. Trade studies and technology development efforts have started for SSN(X) with planned lead boat construction in the mid-2030s.

- Programs funding for 10 DDG 51 class destroyers at a steady rate of two ships per year across the FYDP and seeks authority for multiyear procurement of up to 10 DDGs from FY2023 to FY2027. Delays procurement of DDG(X) to FY2030. Pursuing an FY2030 construction start for DDG(X) sustains DDG 51 Flight III production while reducing execution risk through land-based testing of the integrated power system and new hull form.
- Restructures the FFG 62 procurement profile to 1/2/1/2/1 FY2023-FY2027 due to affordability and design maturation. These changes in small surface combatant procurement manage execution risk in the FFG program for FY2023 as the shipyard works to start construction on the lead ship in FY2022.
- Procures one LPD Flight II in FY2023 and completes procurement of the LPD Flight II line. The preponderance of full funding for LHA 9 is maintained in FY2023 and FY2024. The Navy will begin assessment of a next-generation amphibious ship (i.e., LPD(X)) in FY2023.
- Funds six T-AO 205 class ships across the FYDP including two ships in FY2024.
- Procures one T-ATS 6 towing, salvage, and rescue ship and completes the program in FY2023.
- Begins serial production of T-AGOS 25 ships in FY2025.
- Includes funding for two AS(X) ships in FY2025 and FY2026.

Long-Range Naval Vessel Inventory

Balance across procurement, readiness, and capability must remain in order to field credible naval power. It takes decades of consistent procurement; operations and sustainment; and all the supporting manpower, training, infrastructure, and networks in a disciplined approach to maintain the naval force needed.

Tables A1-2 thru A1-3 depict the procurement and delivery plans, Table A1-4 shows the retirement plan, which drive the battle force inventories shown in Table A1-5. Tables A1-3 and A1-5 assume industry eliminates excess construction backlog and produces future ships on time and within budget. The first two alternatives provide warfighting commanders ready and lethal platforms with no real budget growth. They are based on the FFAs from the FY22 shipbuilding plan, updated for ship cost increases, service life decreases, FY22 appropriations, and PB23 decisions. The third alternative is based on Navy's INFSA analysis. It is constrained by Navy's assessment of industrial base capacity, but requires additional resources beyond the FYDP. It more closely approaches the previous analytic work depicted in Table 1.

The inventory table indicates the projected number of ships in service on the last day of each fiscal year:

- Provides capable capacity for Combatant Commanders.
- The first two profiles add risk outside the FYDP to the submarine and surface combatant

industrial base due to procurement rates less than two per year due to a greater prioritization on other ship classes.

- Continues to include future plans for introducing new or evolved platforms such as the next generation attack (SSN(X)) and large payload-based submarines, small and large surface combatants (DDG(X)), logistics, and support ships.

- The Department continues to review opportunities to accelerate new construction platforms and to assess the ability to extend existing platforms that have a satisfactory Lifecycle Health Assessment to achieve the force necessary to support the Combatant Commanders.

Table A1-2. Long-Range Procurement Profile[1, 2]

Transition *Future Force Design*

FYDP

Fiscal Year	23	24	25	26	27
Aircraft Carrier					
Large Surface Combatant	2	2	2	2	2
Small Surface Combatant	1	2	1	2	1
Attack Submarines	2	2	2	2	2
Ballistic Missile Submarines		1		1	1
Cruise Missile Submarines					
Amphibious Warfare Ships	2		1	1	2
Combat Logistics Force	1	2	1	2	2
Support Vessels	1		2	3	1
Total New Construction	9	9	9	13	11

ALTERNATIVE 1	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Aircraft Carrier	1					1					1					1					1				
Large Surface Combatant	1	2	2	2	1	2	1	2	2	2	2	2	2	2	1	2	2	1	2	1	2	2	2	2	2
Small Surface Combatant	2	1	1	1	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Attack Submarines	2	2	1	1	2	1	2	1	2	2	2	2	2	2	1	2	2	2	2	1	2	2	2	2	2
Ballistic Missile Submarines	1	1	1	1	1	1	1	1																	
Cruise Missile Submarines														1				1			1			1	
Amphibious Warfare Ships	2	2	2	3	2	2	2	3	2	2	1			1		1	1	2	2	2	3	2	3	3	2
Combat Logistics Force	2	2	2	2	2	2	2	1	1					1	1		2	2	3	3	3	1	1	1	1
Support Vessels	1	1																							
Total New Construction	12	11	9	10	9	11	9	10	9	8	8	6	6	8	7	7	9	11	10	10	13	9	10	11	9

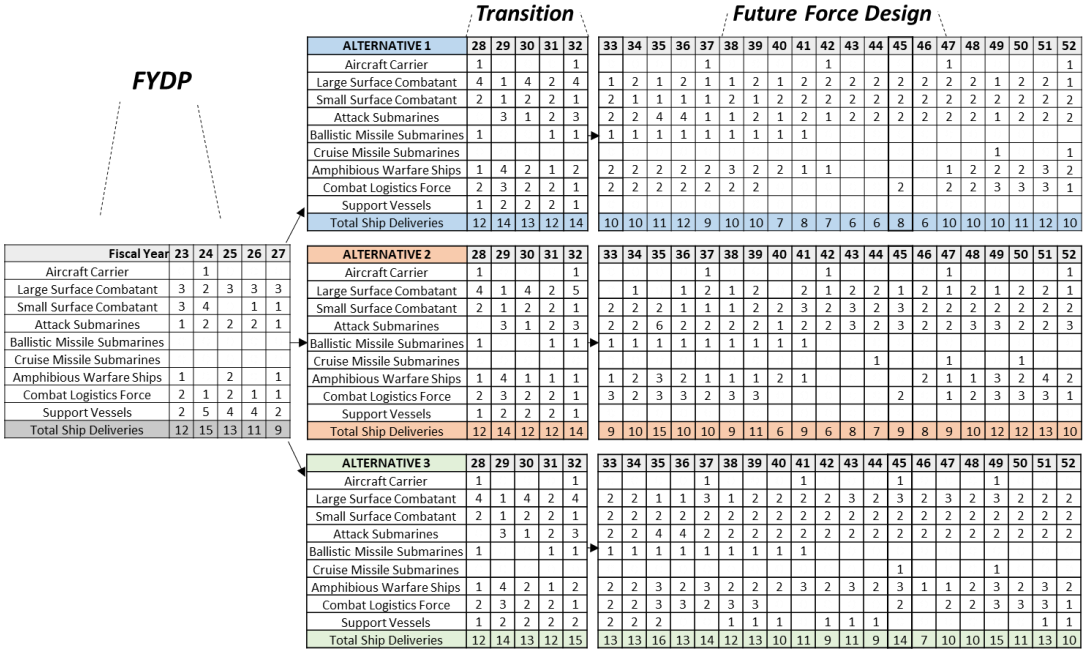
ALTERNATIVE 2	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Aircraft Carrier	1					1					1					1					1				
Large Surface Combatant	1	1	1	1	2	1	1	1	2	1	2	2	2	1	2	1	2	2	1	2	1	2	1	2	2
Small Surface Combatant	2	2	1	1	1	1	1	2	2	3	2	3	2	3	2	2	2	2	2	2	2	2	2	2	2
Attack Submarines	2	2	2	2	2	1	2	2	3	2	3	2	2	3	3	2	2	3	2	2	3	2	2	3	2
Ballistic Missile Submarines	1	1	1	1	1	1	1	1																	
Cruise Missile Submarines										1			1			1			1			1			1
Amphibious Warfare Ships	1	2	1	2	2	2	1	2	1	1	1			2		2	1	1	3	2	3	2	3	3	3
Combat Logistics Force	2	2	3	2	2	3	3	2	2					1	1		1	2	3	3	3	1	1	1	2
Support Vessels	1	1																							
Total New Construction	11	11	9	9	10	10	9	10	10	8	9	7	7	10	8	9	8	10	12	11	13	10	9	11	12

ALTERNATIVE 3	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Aircraft Carrier	1				1				1				1				1				1				1
Large Surface Combatant	2	2	2	2	2	2	2	2	3	2	3	2	3	2	3	2	2	2	2	2	2	2	2	2	2
Small Surface Combatant	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Attack Submarines	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Ballistic Missile Submarines	1	1	1	1	1	1	1	1																	
Cruise Missile Submarines											1			1					1				1		
Amphibious Warfare Ships	3	2	3	2	2	2	3	2	2	3	3	3	3	2	2	1	1	2	2	3	2	3	2	3	2
Combat Logistics Force	2	2	2	2	2	3	3	2	2					1	1		2	2	3	3	3	1	1	1	1
Support Vessels	1	2	2	2	2	1			1	1		1	1	1							1	1	1	1	1
Total New Construction	14	13	14	13	14	13	13	11	13	10	11	10	12	10	11	7	10	10	12	12	13	11	11	11	11

[1] A decision on CVN 82/83 two-ship buy is required no later than FY25 and will be evaluated during upcoming force structure and industrial base studies. The Department is reviewing Large and Small Surface Combatant and Attack Submarine procurement quantities in FY2028-2032.

[2]The ability of the industrial base to support Alternative 3 has not been independently assessed.

Table A1-3. Battle Force Delivery Plan



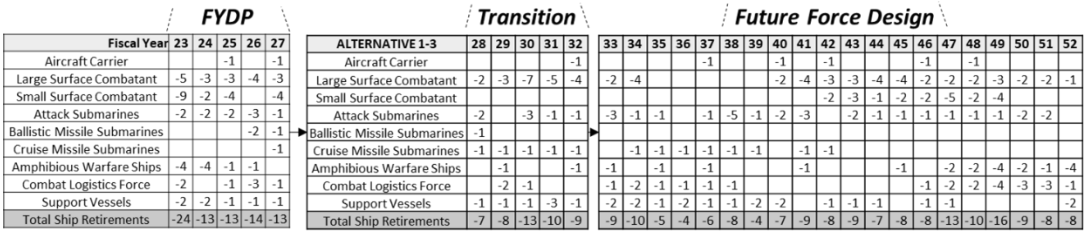
Fiscal Year	23	24	25	26	27
Aircraft Carrier		1			
Large Surface Combatant	3	2	3	3	3
Small Surface Combatant	3	4		1	1
Attack Submarines	1	2	2	2	1
Ballistic Missile Submarines					
Cruise Missile Submarines					
Amphibious Warfare Ships	1		2		1
Combat Logistics Force	2	1	2	1	1
Support Vessels	2	5	4	4	2
Total Ship Deliveries	12	15	13	11	9

ALTERNATIVE 1	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Aircraft Carrier	1				1					1					1					1					1
Large Surface Combatant	4	1	4	2	4	1	2	1	2	1	1	2	1	2	2	2	2	2	2	2	2	1	2	2	1
Small Surface Combatant	2	1	2	2	1	2	1	1	1	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2
Attack Submarines		3	1	2	3	2	2	4	4	1	1	2	1	2	1	2	2	2	2	2	2	1	2	2	2
Ballistic Missile Submarines	1			1	1	1	1	1	1	1	1	1	1	1											
Cruise Missile Submarines																						1			1
Amphibious Warfare Ships	1	4	2	1	2	2	2	2	2	2	3	2	2	1	1					1	2	2	2	3	2
Combat Logistics Force	2	3	2	2	1	2	2	2	2	2	2	2						2		2	2	3	3	3	1
Support Vessels	1	2	2	2	1																				
Total Ship Deliveries	12	14	13	12	14	10	10	11	12	9	10	10	7	8	7	6	6	8	6	10	10	10	11	12	10

ALTERNATIVE 2	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Aircraft Carrier	1				1					1					1					1					1
Large Surface Combatant	4	1	4	2	5		1		1	2	1	2		2	1	2	2	1	2	1	2	1	2	2	1
Small Surface Combatant	2	1	2	2	1	2	2	2	1	1	1	2	2	3	2	3	2	3	2	2	2	2	2	2	2
Attack Submarines		3	1	2	3	2	2	6	2	2	2	2	1	2	2	3	2	3	2	2	3	3	2	2	3
Ballistic Missile Submarines	1			1	1	1	1	1	1	1	1	1	1	1											
Cruise Missile Submarines																	1			1			1		
Amphibious Warfare Ships	1	4	1	1	1	1	2	3	2	1	1	1	2	1					2	1	1	3	2	4	2
Combat Logistics Force	2	3	2	2	1	3	2	3	3	2	3	3						2		1	2	3	3	3	1
Support Vessels	1	2	2	2	1																				
Total Ship Deliveries	12	14	12	12	14	9	10	15	10	10	9	11	6	9	6	8	7	9	8	9	10	12	12	13	10

ALTERNATIVE 3	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Aircraft Carrier	1				1					1				1				1				1			
Large Surface Combatant	4	1	4	2	4	2	2	1	1	3	1	2	2	2	2	3	2	3	2	3	2	3	2	2	2
Small Surface Combatant	2	1	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Attack Submarines		3	1	2	3	2	2	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Ballistic Missile Submarines	1			1	1	1	1	1	1	1	1	1	1	1											
Cruise Missile Submarines																		1				1			
Amphibious Warfare Ships	1	4	2	1	2	2	2	3	2	3	2	2	2	3	2	3	2	3	1	1	2	3	2	3	2
Combat Logistics Force	2	3	2	2	1	2	2	3	3	2	3	3						2		2	2	3	3	3	1
Support Vessels	1	2	2	2	2	2	2	2		1	1	1		1	1	1								1	1
Total Ship Deliveries	12	14	13	12	15	13	13	16	13	14	12	13	10	11	9	11	9	14	7	10	10	15	11	13	10

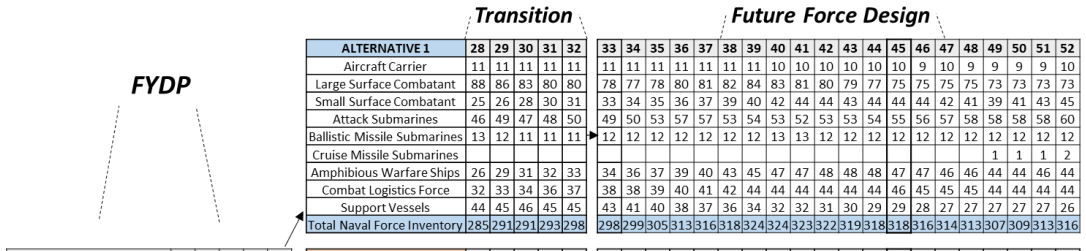
Table A1-4. Battle Force Retirement Plan



Fiscal Year	23	24	25	26	27
Aircraft Carrier			-1		-1
Large Surface Combatant	-5	-3	-3	-4	-3
Small Surface Combatant	-9	-2	-4		-4
Attack Submarines	-2	-2	-2	-3	-1
Ballistic Missile Submarines				-2	-1
Cruise Missile Submarines					-1
Amphibious Warfare Ships	-4	-4	-1	-1	
Combat Logistics Force	-2		-1	-3	-1
Support Vessels	-2	-2	-1	-1	-1
Total Ship Retirements	-24	-13	-13	-14	-13

ALTERNATIVE 1-3	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Aircraft Carrier					-1					-1			-1		-1				-1		-1				
Large Surface Combatant	-2	-3	-7	-5	-4	-2	-4						-2	-4	-3	-3	-4	-4	-2	-2	-2	-3	-2	-2	-1
Small Surface Combatant															-2	-3	-1	-2	-2	-5	-2	-4			
Attack Submarines	-2		-3	-1	-1	-3	-1	-1		-1	-5	-1	-2	-3		-2	-1	-1	-1	-1	-1	-1	-2	-2	
Ballistic Missile Submarines	-1																								
Cruise Missile Submarines	-1	-1	-1	-1	-1		-1	-1	-1	-1	-1	-1		-1	-1										
Amphibious Warfare Ships	-1		-1		-1	-1				-1				-1				-1		-2	-2	-4	-2	-1	-4
Combat Logistics Force		-2	-1			-1	-2	-1	-1	-1	-1	-1							-1	-2	-2	-4	-3	-3	-1
Support Vessels	-1	-1	-1	-3	-1	-2	-2	-1	-2	-1	-1	-2	-2		-1	-1	-1		-1	-1					-2
Total Ship Retirements	-7	-8	-13	-10	-9	-9	-10	-5	-4	-6	-8	-4	-7	-9	-8	-9	-7	-8	-8	-13	-10	-16	-9	-8	-8

Table A1-5. Battle Force Inventory and Trade Space



Fiscal Year	23	24	25	26	27
Aircraft Carrier	11	12	11	11	10
Large Surface Combatant	88	87	87	86	86
Small Surface Combatant	27	29	25	26	23
Attack Submarines	49	49	49	48	48
Ballistic Missile Submarines	14	14	14	14	13
Cruise Missile Submarines	4	4	4	2	1
Amphibious Warfare Ships	28	24	25	24	25
Combat Logistics Force	30	31	32	30	30
Support Vessels	34	37	40	43	44
Total Naval Force Inventory	285	287	287	284	280

ALTERNATIVE 1	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Aircraft Carrier	11	11	11	11	11	11	11	11	11	11	11	11	10	10	10	10	10	10	9	10	9	9	9	9	10
Large Surface Combatant	88	86	83	80	80	78	77	78	80	81	82	84	83	81	80	79	77	75	75	75	75	73	73	73	73
Small Surface Combatant	25	26	28	30	31	33	34	35	36	37	39	40	42	44	44	43	44	44	44	42	41	39	41	43	45
Attack Submarines	46	49	47	48	50	49	50	53	57	57	53	54	53	52	53	53	54	55	56	57	58	58	58	58	60
Ballistic Missile Submarines	13	12	11	11	11	12	12	12	12	12	12	12	13	13	12	12	12	12	12	12	12	12	12	12	12
Cruise Missile Submarines																						1	1	1	2
Amphibious Warfare Ships	26	29	31	32	33	34	36	37	39	40	43	45	47	47	48	48	48	47	47	46	46	44	44	46	44
Combat Logistics Force	32	33	34	36	37	38	38	39	40	41	42	44	44	44	44	44	44	46	45	45	45	44	44	44	44
Support Vessels	44	45	46	45	45	43	41	40	38	37	36	34	32	32	31	30	29	29	28	27	27	27	27	27	26
Total Naval Force Inventory	285	291	291	293	298	298	299	305	313	316	318	324	324	323	322	319	318	318	316	314	313	307	309	313	316

ALTERNATIVE 2	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Aircraft Carrier	11	11	11	11	11	11	11	11	11	11	11	11	10	10	10	10	10	10	9	10	9	9	9	9	10
Large Surface Combatant	88	86	83	80	81	78	76	76	77	79	80	82	80	78	76	75	73	70	70	69	69	67	67	67	67
Small Surface Combatant	25	26	28	30	31	33	35	37	38	39	40	42	44	47	47	47	48	49	49	47	46	44	46	48	50
Attack Submarines	46	49	47	48	50	49	50	55	57	58	55	56	55	54	56	57	58	60	61	62	64	66	66	66	69
Ballistic Missile Submarines	13	12	11	11	11	12	12	12	12	12	12	12	13	13	12	12	12	12	12	12	12	12	12	12	12
Cruise Missile Submarines																		1	1	1	2	2	2	3	3
Amphibious Warfare Ships	26	29	30	31	31	31	33	35	37	37	38	39	41	41	41	41	41	40	42	41	40	39	40	43	42
Combat Logistics Force	32	33	34	36	37	39	39	41	43	44	46	49	49	49	49	49	49	51	50	49	49	48	48	48	48
Support Vessels	44	45	46	45	45	43	41	40	38	37	36	34	32	32	31	30	29	29	28	27	27	27	27	27	26
Total Naval Force Inventory	285	291	290	292	297	296	297	307	313	317	318	325	324	324	322	321	321	322	322	319	318	314	318	323	327

ALTERNATIVE 3	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Aircraft Carrier	11	11	11	11	11	11	11	11	11	11	11	11	10	11	10	10	10	11	10	10	9	10	10	10	10
Large Surface Combatant	88	86	83	80	80	80	78	79	80	83	84	86	86	84	83	83	81	80	80	81	81	81	81	81	82
Small Surface Combatant	25	26	28	30	31	33	35	37	39	41	43	45	47	49	49	48	49	49	49	46	46	44	46	48	50
Attack Submarines	46	49	47	48	50	49	50	53	57	58	55	56	56	55	57	57	58	59	60	61	62	63	63	63	65
Ballistic Missile Submarines	13	12	11	11	11	12	12	12	12	12	12	12	13	13	12	12	12	12	12	12	12	12	12	12	12
Cruise Missile Submarines																		1	1	1	1	2	2	2	2
Amphibious Warfare Ships	26	29	31	32	33	34	36	38	40	42	44	46	48	50	52	55	57	59	60	59	59	58	58	60	58
Combat Logistics Force	32	33	34	36	37	38	38	40	42	43	45	48	48	48	48	48	48	50	49	49	49	48	48	48	48
Support Vessels	44	45	46	45	46	46	46	47	45	44	44	43	42	42	42	42	42	42	41	40	40	40	40	41	40
Total Naval Force Inventory	285	291	291	293	299	303	306	317	326	334	338	347	350	352	353	355	357	363	362	359	359	358	360	365	367

Appendix 2

Annual Funding for Ship Construction

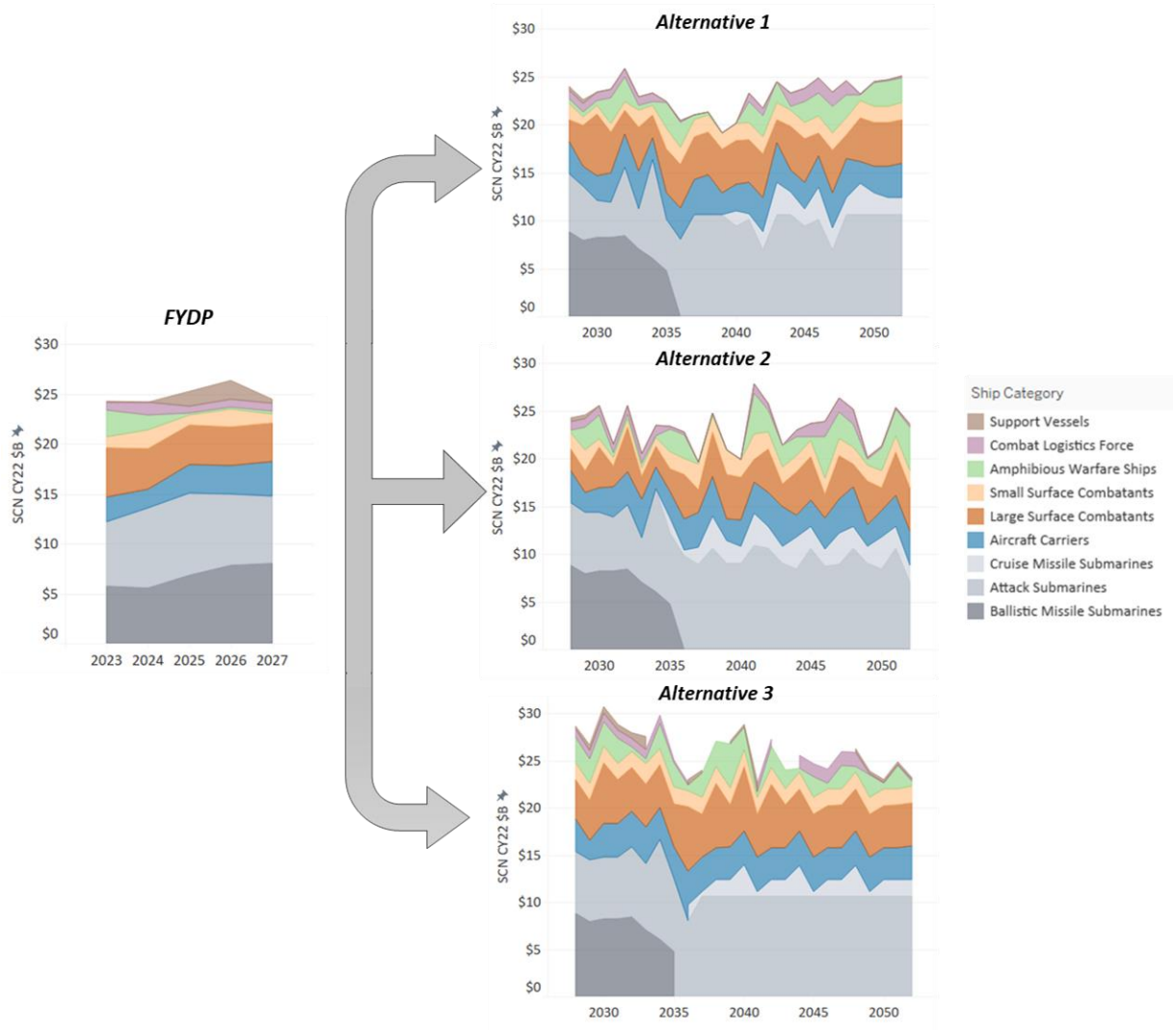
Funding is in FY2022 constant dollars. In Figure A2-1, the first two graphics depict the estimated funding required to achieve the first two profiles of battle force inventories depicted in Appendix 1, Table A1-5, and assume industry produces future ships on time and within budget. The SSBN force was last recapitalized from FY1974 to FY1989. The fiscal impact of the *Columbia* class increased significantly in FY2021 with procurement of the lead SSBN. The impact grows across the FYDP to FY2026 when annual full procurements will be required to support serial production through FY2035. This strategic nuclear investment represents the Navy's most important program and largest fiscal challenge over the next 15 years.

The cost to procure a larger Navy represented by the third profile in Table A1-5, is shown in the third graphic of Figure A2-1, and assumes industry produces future ships on time and within budget. The high range represents an additional $75B real growth beyond the FYDP in FY2022 constant dollars. The increased procurement level, informed by industrial base capacity and on-time and on-budget performance, achieves 326 manned battle force ships in the mid-2030s, and ultimately achieves 363 manned battle force ships in FY2045. The previous analytic work depicted in Table 1 will be updated with follow-on force structure assessment based on, and thus reflective of, the warfighting requirements of the 2022 NDS.

The cost to sustain a larger Navy is in addition to that required for procurement and is phased within the appropriate accounts (i.e., manpower, support, training, infrastructure) to match ship deliveries. Appendix 3 illustrates the projected cost of owning and operating (operations and sustainment) the fleet at the ranges that represent no real budget growth. This appendix does not include the funding associated with Appendix 5, which discusses the growing logistics requirement and sealift recapitalization.

Next generation ships and submarines are in the early stages of requirements definition. Accordingly, cost estimates and their impact on overall force mix will be determined within the ongoing work of the force structure assessment. The baseline acquisition profiles reinforce long-term workforce stability for thoughtful, agile modernization, and a clearer forecast of when to transition between classes of ships.

Figure A2-1. Annual Funding for Ship Construction (FY2023-2052)



Appendix 3

Annual Funding for Sustainment

NDAA FY2019 directed reporting cost considerations of owning and operating a larger force. The priorities stated in the body of this report require that the DoN ensure the operations and sustainment accounts are funded properly to achieve a ready and capable force.

Scaled operations and sustainment funding to support the size of the fleet is essential to maintain and repair the battle force. Appropriately phased sustainment funding must be consistent with the size of the battle force. To be capable, ready, and lethal, the Navy must remain balanced across the elements of readiness, modernization, and force structure. When the life of a ship is extended, the sustainment requirement grows as the age of the ship increases. Moreover, sustainment resources programmed to shift from a retiring ship to a new ship must now stay in place for the duration of the extension. The sustainment requirement grows until equilibrium is reached at the desired higher force inventory, when deliveries match retirements and all resourcing accounts reach steady-state at a higher, enduring cost. Sustainment funding must also be reallocated from other Navy programs during the year of execution for any proposed ship decommissioning that Congress does not approve.

The sustainment costs in Figures A3-1 through A3-3 represent the funding programmed in the FYDP with FY2027 funding levels inflated forward using Office of the Secretary of Defense indices applied to the inventory alternatives shown in Appendix 1, Table A1-5. Included in this sustainment estimate are personnel, planned maintenance, and baseline operations, which represent those costs tied directly to owning and operating a ship. Figures A3-1 through A3-3 do not capture all costs. For example, long-range costs such as modernization and ordnance (threat and technology driven), infrastructure and training (services spread across many ships), and aviation detachments are not included.

The complex model(s) needed to capture indirect costs to own the force are under development. Similar to procurement, estimates become less accurate further into the future.

Figure A3-1. Alternative 1 Annual Funding for Sustainment (FY2023-2052)[1]

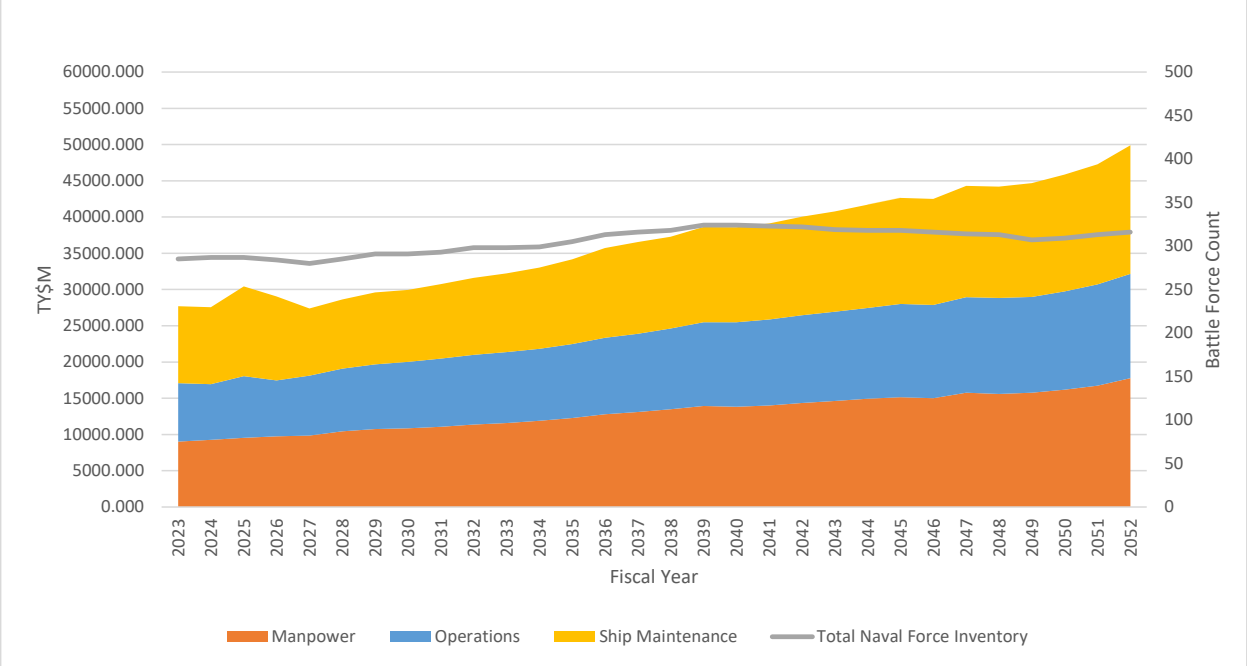


Figure A3-2. Alternative 2 Annual Funding for Sustainment (FY2023-2052)[1]

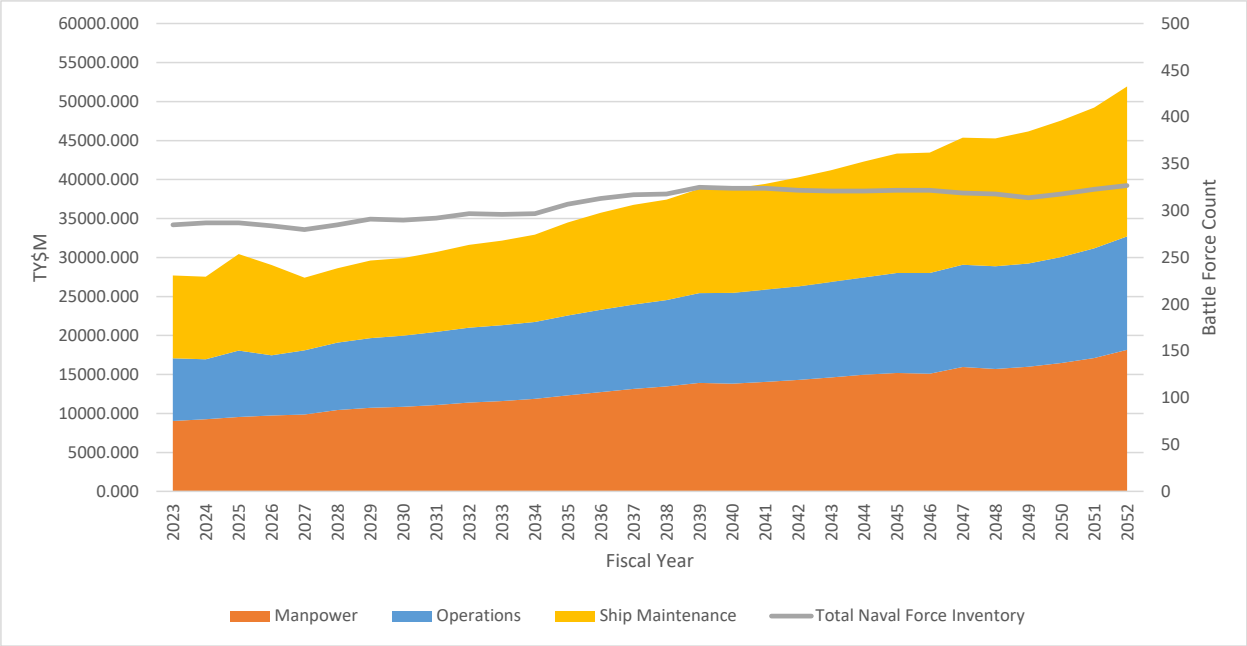
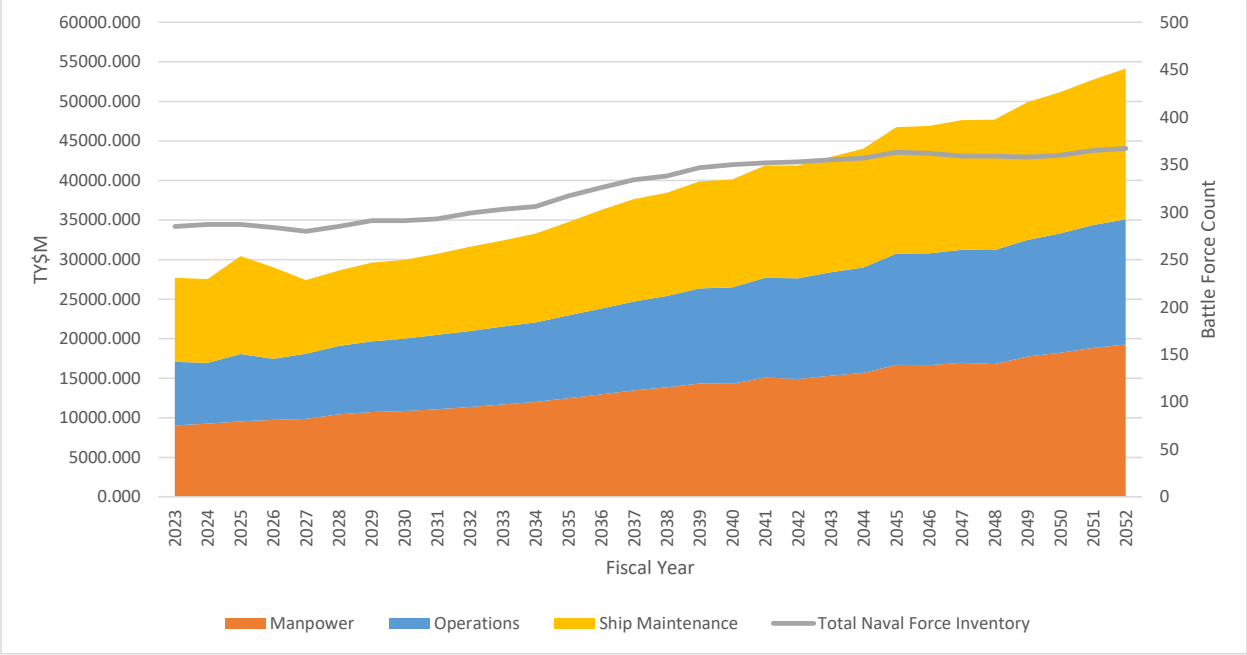


Figure A3-3. Alternative 3 Annual Funding for Sustainment (FY2023-2052)[1]



[1] Shows funding estimated for personnel, maintenance, and operations programmed in the FYDP for the ships in the battle force. Beyond the FYDP, the funding is inflated from FY2027, scaled by projected ship types and quantities in the battle force.

Appendix 4

Planned Decommissioning, Dismantling, and Disposals during FY2023-FY2027 Future-Years Defense Program (FYDP)

This addendum report is in compliance with the Senate Armed Services Committee request for additional information regarding decommissioning and disposal of naval vessels. Table A4-l lists the battle force ships to be inactivated within the FYDP. The table also identifies the planned disposition for each ship and the age of the ship in the year the ship is inactivated. The Expected Service Lives (ESL) for the ship classes have been certified by the Naval Sea Systems Command Senior Technical Authority.

Table A4-1. Ships planned to be inactivated[1] during the FYDP

Inactivation Year (FY) – Total Ships	Ship Name/Designation/Hull Number	Disposition[2]	Age[3]	ESL
2023 – 24 Ships	USS SAN JACINTO (CG 56)	LSA	35	35
	USS LAKE CHAMPLAIN (CG 57)	LSA	35	35
	USS BUNKER HILL (CG 52)	OCIR	37	35
	USS MOBILE BAY (CG 53)	OCIR	36	35
	USS VICKSBURG (CG 69)	OCIR	31	35
	USS FORT WORTH (LCS 3)	OCIR	12	25
	USS MILWAUKEE (LCS 5)	OCIR	7	25
	USS DETROIT (LCS 7)	OCIR	8	25
	USS LITTLE ROCK (LCS 9)	OCIR	7	25
	USS SIOUX CITY (LCS 11)	OCIR	5	25
	USS WICHITA (LCS 13)	OCIR	5	25
	USS BILLINGS (LCS 15)	OCIR	4	25
	USS INDIANAPOLIS (LCS 17)	OCIR	4	25
	USS ST LOUIS (LCS 19)	OCIR	3	25
	USS CHICAGO (SSN 721)	RECYCLE	36	33
	USS KEY WEST (SSN 722)	RECYCLE	36	33
	USS GERMANTOWN (LSD 42)	DISMANTLE	37	40
	USS GUNSTON HALL (LSD 44)	DISMANTLE	34	40
	USS TORTUGA (LSD 46)	DISMANTLE	33	40
	USS ASHLAND (LSD 48)	DISMANTLE	31	40
	USNS JOHN LENTHALL (T-AO 189)	OSIR	36	35
	USNS WALTER S DIEHL (T-AO 193)	DISMANTLE	35	35
	USNS MONFORD POINT (T-ESD 1)	OSIR	10	40
	USNS JOHN GLENN (T-ESD 2)	OSIR	9	40
2024 – 13 Ships	USS ANTIETAM (CG 54)	OCIR	37	35
	USS LEYTE GULF (CG 55)	OCIR	37	35
	USS SHILOH (CG 67)	OCIR	32	35
	USS JACKSON (LCS 6)	OCIR	9	25
	USS MONTGOMERY (LCS 8)	OCIR	8	25
	USS SAN JUAN (SSN 751)	RECYCLE	36	33
	USS TOPEKA (SSN 754)	RECYCLE	35	33
	USS RUSHMORE (LSD 47)	OCIR	33	40
	USS HARPERS FERRY (LSD 49)	OCIR	29	40
	USS CARTER HALL (LSD 50)	OCIR	29	40

	USS PEARL HARBOR (LSD 52)	OCIR	26	40
	USNS CATAWBA (T-ATF 168)	FMS	44	40
	USNS GRASP (T-ARS 51)	DISMANTLE	38	40
2025 – 13 Ships	USS NIMITZ (CVN 68)	RECYCLE	50	50
	USS PHILIPPINE SEA (CG 58)	OCIR	36	35
	USS NORMANDY (CG 60)	OCIR	35	35
	USS LAKE ERIE (CG 70)	OCIR	32	35
	USS HELENA (SSN 725)	RECYCLE	38	33
	USS PASADENA (SSN 752)	RECYCLE	36	33
	USS OAK HILL (LSD 51)	OCIR	29	40
	USNS LEROY GRUMMAN (T-AO 195)	OSIR	36	35
	USS SENTRY (MCM 3)	DISMANTLE	36	30
	USS DEVASTATOR (MCM 6)	DISMANTLE	35	30
	USS GLADIATOR (MCM 11)	DISMANTLE	32	30
	USS DEXTROUS (MCM 13)	DISMANTLE	31	30
	USNS SALVOR (T-ARS 52)	DISMANTLE	39	40
2026 – 14 Ships	USS PRINCETON (CG 59)	OCIR	37	35
	USS CHANCELLORSVILLE (CG 62)	OCIR	37	35
	USS COWPENS (CG 63)	OCIR	35	35
	USS GETTYSBURG (CG 64)	OCIR	35	35
	USS NEWPORT NEWS (SSN 750)	RECYCLE	37	33
	USS SCRANTON (SSN 756)	RECYCLE	35	33
	USS ALEXANDRIA (SSN 757)	RECYCLE	35	33
	USS OHIO (SSGN 726)	RECYCLE	44	42
	USS FLORIDA (SSGN 728)	RECYCLE	43	42
	USS COMSTOCK (LSD 45)	OCIR	36	40
	USNS JOSHUA HUMPHREYS (T-AO 188)	DISMANTLE	39	35
	USNS JOHN ERICSSON (T-AO 194)	LSA	35	35
	USNS PECOS (T-AO 197)	DISMANTLE	36	35
	USS MOUNT WHITNEY (LCC 20)	OCIR	55	68
2027 – 13 Ships	USS DWIGHT D EISENHOWER (CVN 69)	RECYCLE	50	50
	USS CHOSIN (CG 65)	OCIR	36	35
	USS CAPE ST GEORGE (CG 71)	OCIR	34	35
	USS ARLEIGH BURKE (DDG 51)	OCIR	36	40
	USS ANNAPOLIS (SSN 760)	RECYCLE	35	33
	USS MICHIGAN (SSGN 727)	RECYCLE	45	42
	USS HENRY M JACKSON (SSBN 730)	RECYCLE	43	42
	USNS HENRY J KAISER (T-AO 187)	OSIR	40	35
	USS PATRIOT (MCM 7)	DISMANTLE	36	30
	USS PIONEER (MCM 9)	DISMANTLE	35	30
	USS WARRIOR (MCM 10)	DISMANTLE	34	30
	USS CHIEF (MCM 14)	DISMANTLE	33	30
	USNS VICTORIOUS (T-AGOS 19)	OSIR	36	30

Notes:

1. US Navy vessels are commissioned ships that are decommissioned and removed from active status. USNS vessels are non-commissioned vessels that are placed out of service.
2. Out of Commission in Reserve (OCIR) and Out of Service in Reserve (OSIR) ships will be retained on the Naval Vessel Register (NVR) as reactivation candidates. Logistics Support Assets (LSA) are not retained in the NVR.
3. Identifies the age of the vessel at retirement.

Ships planned for dismantling during the FYDP

Prior to final disposition, ships reaching the end of their service lives are evaluated for additional use through intra-agency or inter-agency transfer, foreign military sales (FMS), fleet training, or weapons testing. Ships designated for FMS are retained in a hold status for no more than two years in accordance with Navy policy. The Navy intends to dismantle the ships listed in Table A4-2 within the FYDP. Specific dates will be determined when the ships are contracted for scrapping or recycling.

Table A4-2. Ships Planned for Disposal by Dismantling

Ex-SAFEGUARD (ARS 50)	USNS HENRY J KAISER (T-AO 187)
Ex-GRAPPLE (ARS 53)	USNS JOSHUA HUMPHRIES (T-AO 188)
Ex-NAVAJO (ATF 169)	USNS WALTER S DIEHL (T-AO 193)
Ex-MOHAWK (ATF 170)	USNS PESCOS (T-AO 197)
Ex-SIOUX (ATF 171)	USNS GRASP (T-ARS 51)
Ex-KLAKRING (FFG 42)	USNS SALVOR (T-ARS 52)
Ex-DEWERT (FFG 45)	USS GERMANTOWN (LSD 42)
Ex-SIMPSON (FFG 56)	USS GUNSTON HALL (LSD 44)
Ex-KAUFFMAN (FFG 59)	USS TORTUGA (LSD 46)
Ex-FREEDOM (LCS 1)	USS ASHLAND (LSD 48)
Ex-INDEPENDENCE (LCS 2)	USS SENTRY (MCM 3)
Ex-CHARLESTON (LKA 113)	USS DEVASTATOR (MCM 6)
Ex-MOBILE (LKA 115)	USS PATRIOT (MCM 7)
Ex-EL PASO (LKA 117)	USS PIONEER (MCM 9)
Ex-FORT MCHENRY (LSD 43)	USS WARRIOR (MCM 10)
Ex-ZEPHYR (PC8)	USS GLADIATOR (MCM 11)
Ex-SHAMAL (PC 13)	USS DEXTROUS (MCM 13)
Ex-CANON (PG 90)	USS CHIEF (MCM 14)

Table A4-3 lists the ships that will be used for fleet training in support of Rim of the Pacific (RIMPAC), Pacific Griffon, and Valiant Shield training exercises that will occur during the FYDP. The training will include using selected decommissioned ships as targets for live-fire weapons employment, referred to as a "sinking exercise" (SINKEX). The Chief of Naval Operations (CNO) guidelines authorize SINKEXs when: (1) the event is required to satisfy Title 10 requirements for ship survivability or weapons lethality evaluation; or (2) the event supports major joint or multi-national exercises or evaluation of significant new multi-unit tactics or tactics and weapons combinations.

Table A4-3. Ships Planned for use in Future Fleet Training Exercises

Ex-RAINER (AOE 7)	Ex-CLEVELAND (LPD 7)
Ex-BRIDGE (AOE 10)	Ex-DUBUQUE (LPD 8)
Ex-TARAWA (LHA 1)	Ex-JUNEAU (LPD 10)
Ex-PELELIU (LHA 5)	

Summary

Per the annual Ship Disposition Review conducted on May 18, 2021, Navy will inactivate 77 ships within the FYDP (Table A4-1): 40 will be designated OCIR / OSIR; 16 will

be recycled; 17 will be slated for dismantlement and 4 are assigned a FMS or LSA disposition. This will bring the total number of ships designated for dismantlement to 36 (Table A4-2, 18 previously inactivated ships and 18 ships added during the FYDP). Seven ships are designated for fleet training support (SINKEX) (Table A4-3).

Appendix 5

Auxiliary and Sealift Shipbuilding Plan

Auxiliary and sealift vessels provide support to the joint force, battle force, shore-based facilities, and broader national security missions.

Auxiliary Force Structure

Non-battle force auxiliary ships are operating platforms designed for unique United States military and federal government missions including oceanographic and hydrographic surveys, underwater surveillance, missile tracking and data collection, acoustic research, and submarine support. Tables A5-1 and A5-2 depict current and required inventories.

Table A5-1. Auxiliary vessels owned and operated by DoN

Type	Current Inventory	Required Inventory
Oceanographic survey ships (AGS)	6	8
Navigation test support ship (AGS)	1	1
Submarine escort ships (AGSE)	4	4
Hospital ships (AH)	2	2
Cable repair ships (ARC)	1	2
High speed transport (HST)	1	-
Total	**15**	**17**

Table A5-2. Auxiliary vessels procured by DoN and operated by other services/agencies

Type	Current Inventory	Required Inventory
Missile range instrumentation ship (AGM)	2	2
Oceanographic research ships (AGOR)	6	6
Total	**8**	**8**

Strategic Sealift Force Structure

Strategic sealift is a key enabler of DMO and joint power projection. Sealift ships transport approximately 90 percent of Army and Marine Corps combat equipment and supplies in support of major combat operations. Organic (U.S. government-owned) sealift includes: afloat prepositioning (PREPO) vessels, forward-deployed in full operating status (FOS); surge sealift vessels, maintained in a reduced operating status (ROS) in the continental United States (CONUS); and special capability vessels providing cargo transfer and support functions. With an average vessel age over 40 years, recapitalization of the fleet is necessary to maintain required sealift capabilities. Table A5-3 lists inventory contributing to organic strategic sealift.

Table A5-3. Organic Strategic Sealift Inventory

Type	Current Inventory	Required Inventory
Prepositioning Roll-On/Roll-Off (AK/AKR)	15	19
Surge Roll-On/Roll-Off (RORO)	49	59
Special Capability – Crane ships (ACS)	4	4
Special Capability – Aviation logistics ships (AVB)	2	2
Special Capability – Offshore petroleum distribution (AG)	1	1
Total	**71**	**85**

PREPO vessels operate under Military Sealift Command (MSC) supporting joint warfighting requirements. The FY2023 PREPO sealift fleet consists of 15 Roll-On/Roll-Off (AK/AKR) vessels. This Appendix excludes 4 special capability ships (AKE/ESD) included in the battle force command/support ships category.

Navy resources the procurement, operations, and sustainment of 10 PREPO AK/AKR vessels to meet Marine Corps Maritime Prepositioning Force (MPF) requirements. Army resources operations and sustainment for 5 (AKR) ships meeting service specific requirements. DoN has initiated a new construction acquisition plan to meet future MPF requirements. Current projection is for smaller more capable ships, requiring more ships to meet capacity, with lead ship delivery aligned with current AK vessel retirements beginning in 2030.

Surge sealift vessels operate under MSC and the Department of Transportation's Maritime Administration (MARAD) supporting joint requirements. The FY2023 Surge fleet consists of 49 RORO vessels, and 7 special capability (ACS/AVB/AG) vessels. By the end of FY2023, 7 of the used vessels procured in FY2021-FY2022, will be ready for tasking, 5 RORO vessels will retire from service for future disposal, 8 RORO vessels will transition from MSC's Surge Sealift fleet to MARAD's Ready Reserve Force (RRF), 3 PREPO vessels will transition to surge, and 2 additional used RORO vessels will be procured and enter the RRF.

PB2023 continues Navy's commitment to recapitalize surge sealift requirements through procurement and conversion of used commercial RORO ships; replacing cargo capacity lost as ships retire from service. Required inventory reflects the number of vessels necessary to meet total surge capacity, assuming future procurements meet minimum RORO operational requirements. As the fleet is recapitalized, current inventory will vary depending on the cargo capacity of individual vessels in the fleet.

Procurement Activity

To recapitalize surge sealift fleet, Navy is funding MARAD to acquire used commercial RORO vessels. MARAD has contracted a commercial Vessel Acquisition Manager (VAM) to facilitate vessel procurements. Vessel conversions necessary to meet operational requirements and life-cycle sustainment work will be completed by the U.S. commercial repair industry.

Table A5-4 provides sealift buy-used procurement and conversion funding. Used vessels are commercial RORO ships procured with Shipbuilding and Conversion, Navy funds (SCN), and modified as necessary to meet military cargo carriage requirements with Operation and Maintenance, Navy (OMN). Funding is transferred to MARAD by General Provision. Early fiscal year procurements are converted/modified in the same year, while late procurements are converted/modified the following year.

Table A5-4 PB2023 FYDP funding – SCN, OMN and RDT&E

Long Range Auxiliary and Sealift Plan

	FY23		FY24		FY25		FY26		FY27		FYDP	
Ship Type ($M)	**$**	**Qty**	**$**	**Qty**	**$**	**Qty**	**$**	**Qty**	**$**	**Qty**	**$**	**Qty**
Surge RORO (Used Vessels) SCN Procurement	138	2	142	2	146	2	150	2	155	2	731	10
Surge RORO (Used Vessels) OMN Conversion	104	4	42	2	43	2	45	2	45	2	279	12
PREPO (New Con) RDTEN			15		7		3		2		26	

Table A5-5 depicts new construction shipbuilding procurements for auxiliary and sealift ships with a planned total of 20 ships by FY2028 (includes ships counted in the battle force).

Table A5-5 Auxiliary and Sealift Vessel Procurement Plan – New Construction Vessels

Ship Type / Fiscal Year	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Oceanographic Survey Ships (AGS)						1	2	1		1	1										1								1	
Navigation Test Support Ship (AGS)						1																								
Submarine Escort Ships (AGSE)																														
Hospital ships (AH)									1	1																				
Cable repair ships (ARC)		1				1																								
High speed transport (HST)																														
Crane Ships (ACS)																														
Offshore Petroleum Distribution (AG)																														
Prepositioning RORO (AK/AKR)						1	1	1	1	1	1	1														2	3	3	1	
Aviation Support Ships (AVB)																														
Surge (RORO)																														
Total Procurement - New	0	1	0	0	0	4	3	2	2	3	2	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2	3	0	0	0

Table A5-6 depicts used vessel procurements for auxiliary and sealift ships. The current profile of 2 used RORO ship procurements per year does not replace cargo capacity at the rate required by planned vessel retirements which will create some risk in mission execution.

Table A5-6 Auxiliary and Sealift Vessel Procurement Plan – Used Vessels

Ship Type / Fiscal Year	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Oceanographic Survey Ships (AGS)																														
Navigation Test Support Ship (AGS)																														
Submarine Escort Ships (AGSE)																					2	2								
Hospital ships (AH)																														
Cable repair ships (ARC)																														
High speed transport (HST)																														
Crane Ships (ACS)						2	2																							
Offshore Petroleum Distribution (AG)																														
Prepositioning RORO (AK/AKR)																														
Aviation Support Ships (AVB)						1	1																							
Surge (RORO)	2	2	2	2	2	4	4	4	4	3	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	2	2	2	2	2	7	7	4	4	3	2	2	2	1	1	1	2	2	2	2	4	4	2	2	2	2	2	2	2	2

Tables A5-7 and A5-8 depict associated delivery plans for shipbuilding and used vessels, respectively; assuming construction and conversion efforts remain on plan.

Table A5-7 Auxiliary and Sealift Vessel Delivery Plan – New Construction Vessels

Ship Type / Fiscal Year	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Oceanographic Survey Ships (AGS)										1	2	1		1	1										1					
Navigation Test Support Ship (AGS)										1																				
Submarine Escort Ships (AGSE)																														
Hospital ships (AH)													1	1																
Cable repair ships (ARC)					1			1																						
High speed transport (HST)																														
Crane Ships (ACS)																														
Offshore Petroleum Distribution (AG)																														
Prepositioning RORO (AK/AKR)								1	1	1	1	1	1	1	1													2	3	3
Aviation Support Ships (AVB)																														
Surge (RORO)																														
Total Delivery - New	0	0	0	0	1	0	0	2	1	3	3	2	2	3	2	0	0	0	0	0	0	0	0	0	1	0	0	2	3	3

Table A5-8 Auxiliary and Sealift Vessel Delivery Plan – Used Vessels

Ship Type / Fiscal Year	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Oceanographic Survey Ships (AGS)																														
Navigation Test Support Ship (AGS)																														
Submarine Escort Ships (AGSE)																						2	2							
Hospital ships (AH)																														
Cable repair ships (ARC)																														
High speed transport (HST)																														
Crane Ships (ACS)						2	2																							
Offshore Petroleum Distribution (AG)																														
Prepositioning RORO (AK/AKR)																														
Aviation Support Ships (AVB)							1	1																						
Surge (RORO)	2	2	2	2	2	4	4	4	4	3	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Total Delivery - Used	2	2	2	2	2	6	7	5	4	3	2	2	2	1	1	1	2	2	2	2	2	4	4	2	2	2	2	2	2	2

Table A5-9 shows the retirement plan that, along with the delivery plan, drives the total auxiliary and sealift force inventory in Table A5-10. Executing this plan, for both new construction and procurement of used vessels, will be contingent on the availability of funding.

Table A5-9 Auxiliary Vessel and Sealift Retirement Plan

Ship Type / Fiscal Year	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Oceanographic Survey Ships (AGS)									-1		-1		-1		-1	-1										-1				
Navigation Test Support Ship (AGS)										-1																				
Submarine Escort Ships (AGSE)																						-2	-2							
Hospital ships (AH)														-1	-1															
Cable repair ships (ARC)					-1																									
High speed transport (HST)						-1																								
Crane Ships (ACS)						-2	-2																							
Offshore Petroleum Distribution (AG)																					-1									
Prepositioning RORO (AK/AKR)											-1	-1	-1															-2	-3	-3
Aviation Support Ships (AVB)										-1	-1																			
Surge (RORO)	-5		-2	-3	-3	-5	-7	-4	-2	-3	-2	-2	-1	-1	-2										-2	-4	-3	-3	-2	-3
Total Retirements	-5	0	-2	-3	-4	-8	-9	-4	-3	-5	-5	-3	-3	-2	-4	-1	0	0	0	0	-1	-2	-2	0	-2	-5	-3	-5	-5	-6

Table A5-10 Auxiliary and Sealift Vessel Inventory

Fiscal Year	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Oceanographic Survey Ships (AGS)	7	7	7	7	7	7	6	6	6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Navigation Test Support Ship (AGS)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Submarine Escort Ships (AGSE)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Hospital ships (AH)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Cable repair ships (ARC)	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
High speed transport (HST)	1	1	1	1	1																										
Crane Ships (ACS)	4	4	4	4	4	4	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Offshore Petroleum Distribution (AG)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
Prepositioning RORO (AK/AKR)	15	12	12	12	12	12	12	13	14	15	16	16	16	16	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Aviation Support Ships (AVB)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Surge (RORO)	49	54	56	56	55	56	55	52	52	52	51	51	49	49	49	49	51	53	55	57	59	61	63	63	63	63	61	59	59	59	59
Total Auxiliary and Sealift Inventory	87	89	91	91	90	90	90	87	88	91	91	91	89	89	90	90	92	94	96	98	99	101	103	103	103	103	101	99	99	99	99