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Department of Defense
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

Modernized Selected Acquisition Report (MSAR) **SSBN 826 COLUMBIA Class Submarine (SSBN 826)**

FY 2025 President's Budget

Effective: December 31, 2023

Defense Acquisition Visibility Environment

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Table of Contents

Common DoD Abbreviations	3
Program Description	5
Responsible Office	6
Executive Summary	7
Schedule	11
Performance	13
Acquisition Budget Estimate	16
Unit Costs	18
Life-Cycle Costs	19
Technologies and Systems Engineering	23
Performing Activities and Contracts	24
Production	27
Deliveries and Expenditures	28
International Program Aspects	29

(U) Common DoD Abbreviations

\$B	Billions of Dollars
\$K	Thousands of Dollars
\$M	Millions of Dollars
ACAT	Acquisition Category
Acq O&M	Acquisition-Related Operations and Maintenance
ADM	Acquisition Decision Memorandum
APA	Additional Performance Attribute
APB	Acquisition Program Baseline
APPN	Appropriation
APUC	Average Procurement Unit Cost
BA	Budget Authority or Budget Activity
Blk	Block
BY	Base Year
CAE	Component Acquisition Executive
CAPE	Cost Assessment and Program Evaluation
CARD	Cost Analysis Requirements Description
CCE	Component Cost Estimate
CCP	Component Cost Position
CDD	Capability Development Document
CLIN	Contract Line Item Number
CPD	Capability Production Document
CY	Calendar Year or Constant Year
DAB	Defense Acquisition Board
DAE	Defense Acquisition Executive
DAES	Defense Acquisition Executive Summary
DAVE	Defense Acquisition Visibility Environment
DoD	Department of Defense
DSN	Defense Switched Network
EMD	Engineering and Manufacturing Development
EVM	Earned Value Management
FD	Full Deployment
FDD	Full-Deployment Decision
FMS	Foreign Military Sales
FOC	Full Operational Capability
FRP	Full-Rate Production
FY	Fiscal Year
FYDP	Future Years Defense Program
ICD	Initial Capabilities Document
ICE	Independent Cost Estimate
Inc	Increment
IOC	Initial Operational Capability
IT	Information Technology
JROC	Joint Requirements Oversight Council
KPP	Key Performance Parameter
KSA	Key System Attribute

LRIP	Low-Rate Initial Production
MDA	Milestone Decision Authority
MDAP	Major Defense Acquisition Program
MILCON	Military Construction
N/A	Not Applicable
O	Objective
O&M	Operations and Maintenance
O&S	Operating and Support
ORD	Operational Requirements Document
OSD	Office of the Secretary of Defense
PAUC	Program Acquisition Unit Cost
PB	President's Budget
PE	Program Element
PEO	Program Executive Officer
PM	Program Manager
POE	Program Office Estimate
R&MF	Revolving and Management Funds
RDT&E	Research, Development, Test, and Evaluation
SAR	Selected Acquisition Report
SCP	Service Cost Position
T	Threshold
TBD	To Be Determined
TY	Then Year
U.S.	United States
U.S.C	United States Code
UCR	Unit Cost Reporting
USD(A&S)	Under Secretary of Defense (Acquisition and Sustainment)

(U) Program Description

Full Name SSBN 826 COLUMBIA Class Submarine	Short Name SSBN 826
PNO 444	Milestone Decision Authority Defense Acquisition Executive
Lead Component Department of the Navy	Program Executive Office PEO Submarines
Joint Program No	Acquisition Type Major Defense Acquisition Program
Adaptive Acquisition Pathway Major Capability Acquisition	Acquired Systems SSBN 826
Acquisition Category ID	
Acquisition Status Active Acquisition	

Mission

The COLUMBIA Class Submarine Program (SSBN 826) will design and construct a replacement for the OHIO Class Fleet Ballistic Missile Submarines (SSBN) which begin retiring in 2027 at a rate of one per year. The program goals are to provide an affordable platform capable of executing the strategic mission while remaining survivable through 2080. The mission of the COLUMBIA Class Submarine is strategic deterrence which will be enabled through the integration and deployment of the TRIDENT II D5 Life Extended Strategic Weapon System (SWS) on a new submarine class that satisfies the Sea Based Strategic Deterrent Initial Capabilities Document and Chief of Naval Operations approved Capabilities Development Document attributes.

(U) Responsible Office**Program Executive Officer**

PEO Submarines

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Program Manager

SSBN 826 COLUMBIA Class Submarine PMO

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(U) Executive Summary

Program Highlights Since Last Report

Since the previous submission, the COLUMBIA Class Program has continued executing detail design, component development, and construction activities. The Program has continued Build I construction efforts authorized in October 2020, including full-scale construction for both lead ship DISTRICT OF COLUMBIA (SSBN 826) and WISCONSIN (SSBN 827), and follow-on ships Advance Procurement / Advance Construction (AP/AC) efforts. COLUMBIA Class continues executing several Lines of Effort (LOE) for Integrated Enterprise Plan (IEP) Initiatives to reduce COLUMBIA Class schedule risk through Design, Construction, Material & Supplier Base, Government Furnished Equipment, Acquisition, and Cost Reduction across the submarine enterprise. While risk areas remain with the Industrial Base, shipbuilder performance, and Government activities, the Program is proactively managing these risks.

The program's design is currently slightly behind schedule but achieved the required milestone of 83% design maturity in May 2020 despite challenges from the COVID-19 pandemic.

Continued design translation to build authority and work issuance is vital to the success of COLUMBIA Class Program with the planned lead ship construction span the same as the SSN 774 Lead Ship, despite being 2.5 times the displacement. The Program continues to drive disclosure completions and has increased focus on managing design change efforts and design-to-build processes. The Navy and General Dynamics Electric Boat (GDEB) continue to work towards validating the Integrated Product Development Environment (IPDE) and business process functionality to further improve design and construction progress.

DISTRICT OF COLUMBIA (SSBN 826) construction has consumed all margin to 84-month contract schedule, and Shipbuilders are not performing at rates required to regain schedule. Current trends, if not improved, will drive construction span beyond contract. Recovery towards 84-month schedule is still possible, but requires immediate and aggressive action by the shipbuilders to improve performance. Specific actions being taken by the shipbuilders to arrest schedule variance are discussed in more detail under the Production assessment.

Construction efforts are ongoing on all six Super Modules (SM) of SSBN 826 throughout various locations at GDEB and HII-NNS. The second ship, SSBN 827, has transitioned to full construction with manufacturing and structural assembly efforts ongoing at both shipbuilders. In addition to full-scale construction efforts of SSBN 826 and SSBN 827, the Program has continued conducting extensive prototyping, Advance Construction, and component development to retire technical, schedule, and manufacturing risks for follow-on ships AP and AC efforts. The program has conducted detailed production planning, to include manufacturing reviews, required facility construction, and resource (manning) efforts. The IEP initiatives execute industrial base risk mitigation, procurement and production efficiencies across the Submarine Enterprise, and manpower and facilities planning efforts. As part of the FY 2022 budget submission, the Navy programmed the following additional IEP initiatives: Continuous Production (CP) of Propulsors; CP of Missile Tube (MT) Outfitting; Multi-Program Material Procurement (MPMP) for SSBN 828-830; MPMP of Production Backup Units (PBU) for SSBN 837; and CP of Launchers, including Strategic Weapon System (SWS) umbilical housings and launch tubes. Implementation and proper phasing of funding of these initiatives support the IEP and are required to allow the program to target the accelerated delivery dates contained within it. In addition to significant investment in the submarine industrial base which are explained in further detail, the FY 2023 budget submission realigned funds to support five shipsets of

Economic Order Quantity (EOQ)/MPMP to help de-risk schedules and level load the supplier base.

The FY 2025 budget submission funds CLB to the 2022 Cost Estimate with impacts from inflation. The FY2025 increase from the FY2024 submission reflects inflation shortfalls as well as \$1,559M for the Submarine Industrial Base (SIB). Inflation is impacting Contractor Furnished Equipment (CFE), Government Furnished Equipment (GFE), material and labor. This funding also supports Reactor Plant GFE increase due to higher costs realized in contract negotiations, Ordnance increases for updated escalation and labor rates, HM&E increases for updated phasing, and increased material costs driven by inflation, as well as Plans and Basic increases based on current performance, including higher rates and material costs. The Program is completing an updated Component Cost Position to support Build II contract negotiation and award. Total increase to SIB in the CLB budget across the FYDP is \$4,029M (FY2025-FY2028) ? additional details below.

The Program is continuing to implement procurement and production efficiencies including MT CP, AC, MPMP (including PBUs), and material ordering to support Shipyard Manufactured Items CP in order to realize construction schedule efficiencies and cost savings consistent with authorities provided by 10 USC 2218a: National Sea-Based Deterrence Fund (NSBDF). The industrial base remains a top program risk. GDEB and HII-NNS are investing in facilities to support the COLUMBIA construction schedule and VIRGINIA Class production requirements. The Navy, GDEB, and their suppliers continued executing MT efforts. The program has delivered 24 fully outfitted MTs for the UK program, and has received 60 MTs for both the US and UK programs from the MT vendors to date.

Supplier Development funding was provided as a plus-up to SSBN 826 AP in FY 2019, FY 2020, and FY 2021 to bolster the industrial base. This funding continues to be utilized for supplier development initiatives, MPMP, CP and PBU. The Government Line of Effort (LOE) 3 team continues to work with the shipbuilders on supplier development funding efforts, readiness results, and supply base health. The FY2023 budget submission included the addition of funding for the SIB per OSD CAPE 2021 SIB study (referred to as SIB-23 as it was funded in the FY2023 budget), and based on additional studies (CAPE 2023 study: SIB-25), the FY 2025 budget submission builds upon investments made in PB23. These SIB investments provide enterprise funding to strengthen the SIB to support a generational increase in submarine demand and includes supplier development, shipbuilder/supplier infrastructure, workforce development, technology opportunities, and strategic outsourcing. Investments are targeted to support uplift of the Submarine Industrial Base to achieve a "1+2 " Production Cadence, strengthening the SIB and reprioritizing/growing infrastructure to support new construction goals and increased demand as well as improved maintenance and sustainment for the submarine fleet. Funding profile assumes the SIB-25 results captured in the FY2024 Emergency Supplemental Funding for key national security priorities to support improvements to the SIB are funded.

The Program previously awarded the Integrated Product and Process Development (IPPD) contract in November 2017 to execute COLUMBIA Class Design Completion, Component Development, and Prototype efforts. The IPPD contract spans through the completion of the lead ship COLUMBIA Class submarine design and includes incentives for design, construction readiness, material, cost reduction, supplier efforts, and facilities. Subsequent contract modifications in FY 2018 and FY 2019 support Advance Construction, Long Lead Time Material procurements, and Missile Tube Continuous Production. A Contract Modification for ongoing design and prototyping efforts was awarded on June 22, 2020, which also included the Build I pre-priced option for construction of SSBN 826 & SSBN 827, as well as associated design and support efforts. The Navy exercised this contract option on November 5, 2020. This was a modification to the IPPD contract and aligned with the program's approved Acquisition Strategy.

The Build I Option resulted in savings of up to \$1.5B when compared to single ship procurement and leveraged the authorities in the NSBDF. SSBN 826 construction was authorized at the start of FY 2021. SSBN 826 was funded with three years of incremental full funding. SSBN 827 construction was authorized in Sep 2023 and is being funded with two years of incremental full funding. On December 21, 2022, the Navy awarded the Build II AP / AC contract for the next five ships of the class (SSBN 828-832). This award funds AP/AC of critical components and material to support Build II, efforts to support continuous missile tube production, enhancements to develop the Submarine Industrial Base, and sustained class maintenance and support.

The second ship, WISCONSIN (SSBN 827), transitioned from advance construction to full construction following the DAE's Acquisition Decision Memorandum approving the Navy's request for full rate construction of SSBN827 on September 25, 2023 and an anomaly in the FY24 Continuing Resolution.

There are no significant software-related issues with this program at this time.

(U) History of Significant Developments Since Program Inception

Date	Description
October 2023	SSBN 827 Start of Construction authorized.
September 2023	The Milestone Decision Authority (MDA) approved start of SSBN 827 full construction.
December 2022	Navy awarded Build II Advanced Procurement (AP) and Advanced Construction (AP) contract for the next five ships in the class (SSBN 828-832)
December 2022	MILCON project P676 TRIDENT Training Facility (TTF) Kings Bay contract awarded
September 2022	Milestone Decision Authority (MDA) approves the Acquisition Strategy (AS) for COLUMBIA Class Builds II/III
November 2021	USD(A&S) Milestone Decision Authority (MDA) signed an Acquisition Decision Memorandum (ADM) directing COLUMBIA to be funded to the program baseline and Integrated Enterprise Plan (IEP) requirements.
September 2021	Assistant Secretary of the Navy (Research, Development and Acquisition) approved the organizational structure realignment of PEO CLB to PEO SSBN
February 2021	USD (A&S) approved the Program's updated Acquisition Program Baseline for Production to reflect 2020 Cost Estimate and CAPE Lead Ship Authorization (LSA) Issue.
November 2020	Exercised COLUMBIA Build I Option (SSBN 826 and SSBN 827 2 ship procurement).
October 2020	SSBN 826 Start of Construction authorized.
August 2020	The Milestone Decision Authority (MDA) approved entry into Build I construction
October 2019	Ongoing Advance Construction efforts now in progress for all 6 super modules.
January 2019	APB updated to reflect actual award of IPPD contract (September 2017) and align affordability targets with approved Capabilities Development Document (CDD).
September 2018	Award of the Two Year Advance Procurement Funding modification to the IPPD contract.
September 2017	Award of the Integrated Product and Process Development (IPPD) contract. The Navy has transitioned all design efforts from the OHIO Replacement Research & Development (R&D) Design contract to the IPPD contract.
January 2017	Milestone B Acquisition Program Baseline (APB) approved (Program Initiation).
November 2015	Incremental funding authority and authority to enter in contracts for Advance Construction and economic order quantity provided by Public Law 114-92.
December 2014	National Sea-Based Deterrence Fund established by Public Law 113-291.

Date	Description
December 2012	Research, Development, Test and Evaluation (RDT&E) Design Contract issued to General Dynamics - Electric Boat.
February 2012	PB 2013 shifts lead ship construction from FY 2019 to FY 2021; the two year recapitalization delay removed all margin during the OHIO-OHIO Replacement (OR) transition period (FY 2027- FY2042), any delay in OR delivery or unexpected aging impact to OHIO will have significant impacts on SSBN Operational Availability (Ao).
January 2011	Milestone A ADM issued which authorized entry into Technology Maturation and Risk Reduction (TMRR) phase to complete a new design SSBN based on 12 ships with 16 - 87 inch missile tubes.
September 2010	SCP approved with new design SSBN based on 12 ships with 16 - 87 inch missile tubes
October 2008	Secretary of Defense sends letter to United Kingdom (UK) Secretary of State for Defense to affirm the U.S.-UK Mutual Defense Agreement (MDA) and cost sharing for the MDA and Polaris Sales Agreement.
July 2008	USD for Acquisition, Technology, and Logistics (AT&L) issues Acquisition Decision Memorandum (ADM) directing entry into the Concept Refinement Phase and conduct of an Analysis of Alternatives.

(U) Schedule**(U) Schedule Events**

Events		Production APB (Current) 2/17/2021 Objective / Threshold		Current Estimate 12/31/2023	Actual
Milestone A	MS A	Dec 2010	Dec 2010	-	1 Dec 2010
Pre-RFP Release DAB	Pre-EMD Review	Dec 2015	Dec 2015	-	1 Dec 2015
Preliminary Design Review	PDR	Apr 2016	Apr 2016	-	1 Apr 2016
Milestone B	MS B	Jan 2017	Jan 2017	-	1 Jan 2017
Integrated Process and Product Development Contract Award	Other	Sept 2017	Sept 2017	-	1 Sept 2017
Two Year Advance Procurement Funding Modification	Other	Sept 2018	Sept 2018	-	1 Sept 2018
Critical Design Review	Other	Apr 2020	Apr 2020	-	1 Apr 2020
Block I Contract Award	Other	Oct 2020	Oct 2020	-	1 Jun 2020
Lead Ship Authorization / Construction Start	Other	Oct 2020	Oct 2020	-	1 Oct 2020
Lead Ship Contract Delivery	Other	Apr 2027	Oct 2027	Oct 2027	-
Initial Operational Test and Evaluation Complete	IOT&E	Feb 2029	Aug 2029	Feb 2029	-
Lead Ship First Deployment Start	Other	Apr 2030	Oct 2030	Apr 2030	-
Initial Operational Capability	IOC	Apr 2030	Oct 2030	Apr 2030	-

Notes

SSBN Hull Delivery (Objective) / Obligation Work Limiting Date (OWLD) Dates [note objective dates are used to develop the OWLD dates]

826 Oct 2027 / Mar 2030

827 Apr 2030 / May 2032

828 Aug 2031 / Sep 2033

829 Sep 2032 / Oct 2034

830 Aug 2033 / Aug 2035

831 Jul 2034 / Jul 2036

832 TBD / TBD

833 TBD / TBD

834 TBD / TBD

835 TBD / TBD

836 TBD / TBD

837 TBD / TBD

The Initial Operational Test and Evaluation Complete current estimate changed from August 2029 to February 2029 to reflect the Program Manager's updated estimate as of 2021.

The Lead Ship First Deployment Start current estimate changed from October 2030 to April 2030 to reflect the Program Manager's updated estimate as of 2021.

The Initial Operational Capability current estimate changed from October 2030 to April 2030 to reflect the Program Manager's updated estimate as of 2021.

Lead Ship Contract Delivery current estimate changed from April 2027 to October 2027 to reflect the Program Manager's updated estimate as of 2023 based on shipbuilder performance.

Schedule Baseline Deviation Explanation

None

(U) Current Significant Schedule Risks and Risks Identified at Milestones/Decisions

Event	Date	Description
Current	12/31/2021	Ability to construct lead ship in 84 months within cost and schedule and ability to reduce from an 84-month production span for the lead ship to a 70-month span for the eleventh and twelfth ships.
Current	12/31/2021	Ability to meet SSBN Operating Cycle and operate ships within OSD Affordability Caps (CY 2017\$).

(U) Performance

(U) Performance Attributes

Operations and Support (O&S) Cost KSA			KPP
Current Estimate 12/31/2023		\$125.5M (CY 2017\$)	
Demonstrated Performance -		-	
Production APB (Current) 2/17/2021	Objective	Average annual O&S cost per unit of \$119M (CY 2017\$)	
	Threshold	Average annual O&S cost per unit of \$131M (CY 2017\$)	
Lead Ship First Deployment Key Schedule Parameter			APA
Current Estimate 12/31/2023		Third Quarter of FY 2030	
Demonstrated Performance -		-	
Production APB (Current) 2/17/2021	Objective	Third quarter of FY 2030	
	Threshold	First quarter of FY 2031	
Training KPP			KPP
Current Estimate 12/31/2023		CLB SSBN crews are capable of being certified proficient for strategic patrol operations by the Group Commander upon completion of the normal PDTP in accordance with Fleet instructions	
Demonstrated Performance -		-	
Production APB (Current) 2/17/2021	Objective	CLB SSBN crews are capable of being certified proficient for strategic patrol operations by the Group Commander upon completion of the normal PDTP in accordance with Fleet instructions	
	Threshold	(T=0) CLB SSBN crews are capable of being certified proficient for strategic patrol operations by the Group Commander upon completion of the normal PDTP in accordance with Fleet instructions	
Procurement Cost KCP			KPP
Current Estimate 12/31/2023		\$7.12B (CY 2017\$)	
Demonstrated Performance -		-	
Production APB (Current) 2/17/2021	Objective	APUC of \$7.3B (CY 2017\$)	
	Threshold	APUC of \$8.0B (CY 2017\$)	
Net-Ready KPP			KPP
Current Estimate 12/31/2023		Meet the requirements defined within the CLB SSBN PIIT of the Common Submarine Information Support Plan	
Demonstrated Performance		-	

-		
Production APB (Current) 2/17/2021	Objective	Meet the requirements defined within the CLB SSBN PIIT of the Common Submarine Information Support Plan
	Threshold	(T=0) Meet the requirements defined within the CLB SSBN PIIT of the Common Submarine Information Support Plan
Space, Weight, Power, and Cooling (SWAP-C) KSA		KSA
Current Estimate 12/31/2023		-
Demonstrated Performance -		-
Production APB (Current) 2/17/2021	Objective	Future Growth Margin: 3% of Condition A-1 weight Cooling Capacity: 10% cooling capacity over the chill water design heat load Power - 10% electrical power future growth margin for ship's electrical loads at full power while underway at delivery
	Threshold	(T=0) Future Growth Margin: 3% of Condition A-1 weight Cooling Capacity: 10% cooling capacity over the chill water design heat load Power - 10% electrical power future growth margin for ship's electrical loads at full power while underway at delivery

(U) Requirement Source:

Sponsor(s): None

1. Document Type Not Provided

Notes: CDD Revision one for the COLUMBIA Class Submarine dated January 22, 2018

Notes

CLB replaces OR (OHIO Replacement)

Acronyms and Abbreviations

CLB - COLUMBIA Class Submarine

KPP - Key Performance Parameter

KSA - Key Schedule Attribute

OR - Ohio Replacement

PDTP - Pre Deployment Training Period

PIIT - Platform Information Integration Table

Deviation Explanations:

The Operations and Support (O&S) Cost KSA Current Estimate updated from \$122.8M (CY2017\$) to \$125.5 (CY2017\$) to reflect the latest SEA05C 2023 Cost Estimate.

The Lead Ship First Deployment Key Schedule Parameter Current Estimate updated from First Quarter of FY 2031 to Third Quarter of FY 2030 to reflect the Program Manager's updated estimate as of CY 2021.

The Procurement Cost KCP reflects the PB 2025 Joint Inflation Calculator (JIC) Escalation Index and reflects PB25 controls.

Performance Deviation Explanation

None

(U) Acquisition Budget Estimate**(U) Total Acquisition Estimates and Quantities**

Category (\$M) Base Year: 2017	Production APB (Current) 2/17/2021 CY\$ obs Objective / Threshold		Current Estimate PB 2025 CY\$ obs / TY\$ obs	
	RDT&E	13,031.7	14,334.9	13,044.0
Procurement	89,440.0	98,384.0	85,711.2	125,320.2
MILCON	314.6	346.1	341.9	458.4
O&M	0.0	0.0	-	-
R&MF	-	-	-	-
Total Acquisition	102,786.3	-	99,097.1	139,716.8
Program Acquisition Unit Cost	8,565.525	9,422.078	8,258.092	11,643.067
Average Procurement Unit Cost	7,453.333	8,198.666	7,142.600	10,443.350
Program End-Item Quantity				
Development	0		-	
Procurement	12		12	
O&M-Acquired	-		-	

Budget Notes

Current APB Cost Estimate Reference: Office of the Secretary of Defense, Cost Assessment and Program Evaluation (OSD CAPE) Lead Ship Assessment for the Annual COLUMBIA Class Submarine In-Process Review dated August 26, 2020, and COLUMBIA Class 2020 Cost Estimate Updates dated June 26, 2020

Affordability Caps (CY 2017\$) based on an inventory objective of 12 ships and projected life of 42.5 years.

- APUC: \$8.0B;
- Average Annual Operations and Support Cost Per Hull: \$131M

For reporting purposes, the antecedent system for this program is the OHIO Class submarine. The Affordability Cap for O&S and the objective/threshold O&S estimates include United States Naval Ship (USNS) Waters and disposal / inactivation costs.

Budget Estimate Costs reflect the PB 2025 Joint Inflation Calculator (JIC) Escalation Index.

Procurement costs exclude supplier development and SIB funding.

CLB RDTE Congressional Adds C909 (FY 2023 +\$8M, FY 2024 +\$5M) maps to PE/LI 0101221N and C895 (FY 2023 +\$2.75M) maps to PE/LI 0605013N, but are included in PE 0603595N for completeness.

MCN budget excludes \$9M (TY) in FY 2024 for Unspecified Minor Construction as this also covers non-CLB specific projects. Additionally, FY 2025 - 2027 removes N4 (non-CLB specific) scope portion of construction projects. In previous years, 55% of P684 TRF Kings Bay scope and 73% of P817 TRF Bangor scope was programmed by N4 for overall recapitalization. This N4 effort has been removed from the budget table to align with prior agreed upon CLB scope from the APB for an

accurate comparison

Quantity Notes

None

Cost Baseline Deviation Explanation

None

(U) Risk and Sensitivity Analysis

Current Procurement Estimate Risks (12/31/2023)	
1	PAUC / APUC changes since the December 2022 SAR submission were driven by POM25 Inflation/Fact of Life changes.
Current Baseline Risks (2/17/2021)	
None	
Original Baseline Risks (1/4/2017)	
The Navy's Cost position was approved at MSB and the President's Budget for 2018 fully funded the COLUMBIA Class Submarine in accordance with the Milestone B Cost Estimate. Risk: The program office identified two main cost drivers: maintenance and reliability of ships in order to operate within O&S Cost/Hull/Year \$131M, and risks associated with planned construction efforts such as: design maturity, Shipbuilder facilitization and build plan, facilities support, material availability, and Integrated Tube & Hull (ITH) fixturing/welding efforts.	

(U) Unit Costs**(U) Current Estimate Compared with Current Baseline**

Category (CY\$M) Base Year: 2017	Current Baseline 02/17/2021	Current Estimate PB 2025	% Change
Program Acquisition Unit Cost			
Acquisition Cost	102,786.3	99,097.1	
Program Quantity	12	12	
PAUC	8,565.525	8,258.092	-3.59%
Average Procurement Unit Cost			
Procurement Cost	89,440.0	85,711.2	
Procurement Quantity	12	12	
APUC	7,453.333	7,142.600	-4.17%

(U) Current Estimate Compared with Original Baseline

Category (CY\$M) Base Year: 2017	Original Baseline 01/04/2017	Current Estimate PB 2025	% Change
Program Acquisition Unit Cost			
Acquisition Cost	100,221.9	99,097.1	
Program Quantity	12	12	
PAUC	8,351.825	8,258.092	-1.12%
Average Procurement Unit Cost			
Procurement Cost	87,426.5	85,711.2	
Procurement Quantity	12	12	
APUC	7,285.542	7,142.600	-1.96%

Notes

Current Estimate Unit Costs reflect the PB 2025 Joint Inflation Calculator (JIC) Escalation Index. Original APB data is from January 2017 and Current APB data is from February 2021.

(U) Life-Cycle Costs**(U) Operating and Support and Disposal Cost Estimates Compared with Baseline**

Category (\$M) Base Year: 2017	Production APB (Current) 2/17/2021 CY\$ obs Objective / Threshold		Current Estimate CY\$ obs / TY\$ obs	
	Total O&S	64,044.1	70,448.5	64,002.6
Total Disposal	-	-	-	-

(U) Current Cost Estimate Sources**Operating and Support Cost**

Type: Program Office Estimate

Approved by: Program Office, November 15, 2023

Note: 'Annual Cost Estimate completed by NAVSEA 05C in November 2023. "Other" includes disposal costs. Reflects costs through FY85.

Operating and Support Baseline Deviation Explanation

None

Cost Notes

O&S Estimate from SEA05C 2023 Cost Estimate. Annual Cost multiplied by 12 ships and 42.5 service-life years to achieve Total Cost.

O&S Cost Notes - a. Disposal/Demilitarization Cost Estimate and Source of Estimate:

Other costs includes Disposal costs.

b. Sustainment Strategy:

The SSBN 826 COLUMBIA Class Submarine will operate with two crews (Blue/Gold) in two oceans under current strategic presence requirements from existing bases in Bangor, WA and Kings Bay, GA. The COLUMBIA Class Submarine SSBN will have an approximately 42.5-year service life from delivery to retirement.

Additional life cycle details described below:

Sea Trials that include Alpha/Bravo Trials and Board of Inspection and Survey

Operational and Development test period (lead ship only)

Two operating cycles during which the ship will conduct about 124 operating intervals

Two Extended Refit Periods (ERPs) of about 6 months at its one-quarter and three quarter periods of life

An extended shipyard maintenance period not to exceed 24 months at mid-life, consisting of 16 months for Engineered Overhaul (EOH) and 7 months for weapons handling operations and crew certification

Each 112 day operating interval includes:

77-day patrol

35-day refit and resupply period consisting of 22 days for refit production

Approximately every fourth refit and resupply period will be 50 days in duration including 35 days of refit production and dry -docking. The patrol period following a dry-docking refit will normally be shortened to keep the overall operating interval to about 112 days. All availabilities including ERPs will be conducted at the respective homeport and EOH will be conducted at either Norfolk Naval Shipyard (NNSY) or Puget Sound Naval Shipyard (PSNSY). Additionally, COLUMBIA will leverage OHIO existing infrastructure to the maximum extent possible. Achieving this life cycle is the foundation of the product support model for the COLUMBIA Class Submarine Program and all support elements must be aligned to support the life cycle as described. The COLUMBIA Class Submarine life cycle is essentially the same as the current OHIO Class SSBN life cycle with the exception of the mid-life overhaul which will be shorter for COLUMBIA Class Submarines because refueling will not be required. The support model needed for the SSBN life cycle is well understood and being exercised today in support of the OHIO Class. The design of COLUMBIA Class Submarine and its product support strategy must be capable of meeting this life cycle in order to meet its availability requirements.

c. For Each Acquired System or System Variant:

i. Quantity to Sustain: 12

ii. First Operational Fiscal Year: 2031

iii. Final Operational Fiscal Year: 2084

iv. Unit Expected Service Life: 42.5

d. Antecedent System(s) O&S Costs:

i. The antecedent system is SSBN 726. The ship's O&S estimate is based on a Blue/Gold manning philosophy analogous to the OHIO Class manning structure, current maintenance and modernization requirements, and historical submarine data. There are currently 14 OHIO Class Submarines.

(U) Operating and Support Variance with Prior Estimate

(CY\$M) Base Year: 2017	Estimate	
Prior Estimate (10/15/2021)	62,652.5	
Current Estimate	64,002.6	
Category		
	Variance	Explanation
Unit-Level Manpower	493.7	Rates updates
Unit Operations	-40.6	Inflation driven
Maintenance	756.0	Update to rates and VAMOSOC data
Sustaining Support	189.2	Update to rates and VAMOSOC data
Continuing System Improvements	39.0	Rates update
Other	-87.3	
Not Categorized		
	0.0	

(U) Operating and Support Cost Element Structure Estimates by Acquired System

(CY\$M) Base Year: 2017							
System	Unit-Level Manpower	Unit Operations	Maintenance	Sustaining Support	Continuing System Improvements	Other	Total
SSBN 826	16,281.6	1,282.3	19,077.1	3,073.9	17,034.0	7,253.8	64,002.6
Program	16,281.6	1,282.3	19,077.1	3,073.9	17,034.0	7,253.8	64,002.6

(U) Annual Operating and Support Costs per Unit Compared with Antecedent System

(CY\$M) Base Year: 2017							
System	Unit-Level Manpower	Unit Operations	Maintenance	Sustaining Support	Continuing System Improvements	Other	Total
SSBN 826	31.9	2.5	37.4	6.0	33.4	14.2	125.5
SSBN 726 (Antecedent)	84.5	-	-	-	-	-	84.5

(U) Operating and Support Cost Estimate Assumptions

System	Quantity to Sustain	Unit Expected Service Life (Years)	Unit of Measure	Fiscal Years Operational
SSBN 826	12	42.5	Number of Ships	2031 - 2084
SSBN 726 (Antecedent)	14	30.0	Number of Ships	1984 - 2043

Additional O&S Estimate Assumptions

None

Antecedent Estimate Assumptions

The antecedent system is the SSBN 726 OHIO Class Submarine program. Assembly of an accurate compilation O&S cost estimate for the OHIO Class using actual cost data going back to 1984 when USS OHIO was commissioned and then projecting those costs out is problematic based on the availability and detail of the historic data. COLUMBIA Class O&S comparisons with the legacy class are hampered by changes in the OHIO Class composition and extension of the OHIO Class life cycle. OHIO Class was designed in 1970, commissioned between 1984 and 1997, and operational life was extended from original plan of 30 years to an unprecedented 42 years. The OHIO Class is composed of eighteen ships, four of which are ballistic missile submarines (SSGNs), and the other fourteen are guided missile submarines.

The source of antecedent data is the Naval Visibility and Management of Operating and Support Cost (VAMOSOC) database for OHIO Class submarines for the years 1984-2021. This data was adjusted from CY22 to compare to the CY17 CLB O&S average annual per unit cost using the MPN index for 1.0 Unit Level Manpower and O&MN/LF (COMPOSITE) Operations & Maintenance, Navy - Less Fuel (1804) index for remaining WBS elements. The total annual O&S cost per unit is captured under 1.0 Unit-Level Manpower (but does not include 6.0 Indirect Support as this was not pulled

from VAMOSC). Only data from hulls SSBN 730-743 was used (the fourteen SSBNs). The OHIO Class In-Service program office is working on an initial O&S cost estimate, which will be used to update the CLB MSAR/comparison in future reports.

O&S Annual Cost Calculation Memo

None

(U) Technologies and Systems Engineering

(U) Current Significant Technical Risks and Risks Identified at Milestones/Decisions

Event	Date	Description
Current	12/31/2023	Ability to meet SSBN Operating Cycle and operate ships within OSD Affordability Cap (CY17\$)
Current	12/20/2021	Ability to host and conduct timely launch of the TRIDENT II missile.

(U) Performing Activities and Contracts

(U) External Government Activities

None

(U) Contracts and Efforts

Contract Title	Contract Number / Effort	Contractor	Phase
CLIN 1000 COLUMBIA CLASS Design Completion	N00024-17-C-2117 / 1	General Dynamics	Development
CLIN 1100 SSBN 826 Construction	N00024-17-C-2117 / 2	General Dynamics	Production
CLIN 1200 SSBN 827 Advance Procurement/ Advance Construction	N00024-17-C-2117 / 3	General Dynamics	Production
CLIN 2000 IPPD COLUMBIA Component Development and DFA	N00024-17-C-2117 / 4	General Dynamics	Production

(U) Contract and Effort Identification, Price, Quantity and Performance

Contract Number: N00024-17-C-2117 **Order Number:** -
Contract Title: CLIN 1000 COLUMBIA CLASS Design Completion **Strategy:** -
CAGE: -- General Dynamics **Contracting Office:** -
City, State/Province: Groton, CT

Effort Number: 1 **Supported Phase:** Development
Type: Other **Award Date:** September 21, 2017
Latest Modification Date: - **Definitization Date:** October 1, 2017
Latest Modification No.: - **Work Start Date:** -
Technical Data Rights: -
Notes: None

Initial Price (TY\$M) Target / Ceiling	Current Price (TY\$M) Target / Ceiling	Estimate at Completion (TY\$M) Contractor / PM	Initial Quantity	Current Quantity	Delivered Quantity
3,028.9 -	3,547.5 -	- -	-	-	-

(U) Contract and Effort Identification, Price, Quantity and Performance

Contract Number: N00024-17-C-2117 **Order Number:** -
Contract Title: CLIN 1100 SSBN 826 Construction **Strategy:** -
CAGE: -- General Dynamics **Contracting Office:** -
City, State/Province: Groton, CT

Effort Number:	2	Supported Phase:	Production
Type:	Other	Award Date:	September 21, 2017
Latest Modification Date:	-	Definitization Date:	October 1, 2017
Latest Modification No.:	-	Work Start Date:	-
Technical Data Rights:	-		
Notes:	None		

Initial Price (TY\$M) Target / Ceiling	Current Price (TY\$M) Target / Ceiling	Estimate at Completion (TY\$M) Contractor / PM	Initial Quantity	Current Quantity	Delivered Quantity
5,119.0 -	5,163.8 -	- -	-	-	-

(U) Contract and Effort Identification, Price, Quantity and Performance

Contract Number:	N00024-17-C-2117	Order Number:	-
Contract Title:	CLIN 1200 SSBN 827 Advance Procurement/Advance Construction	Strategy:	-
CAGE:	-- General Dynamics	Contracting Office:	-
City, State/Province:	Groton, CT		

Effort Number:	3	Supported Phase:	Production
Type:	Other	Award Date:	September 21, 2017
Latest Modification Date:	-	Definitization Date:	October 1, 2017
Latest Modification No.:	-	Work Start Date:	-
Technical Data Rights:	-		
Notes:	None		

Initial Price (TY\$M) Target / Ceiling	Current Price (TY\$M) Target / Ceiling	Estimate at Completion (TY\$M) Contractor / PM	Initial Quantity	Current Quantity	Delivered Quantity
4,985.7 -	5,006.4 -	- -	-	-	-

(U) Contract and Effort Identification, Price, Quantity and Performance

Contract Number:	N00024-17-C-2117	Order Number:	-
Contract Title:	CLIN 2000 IPPD COLUMBIA Component Development and DFA	Strategy:	-
CAGE:	-- General Dynamics	Contracting Office:	-
City, State/Province:	Groton, CT		

Effort Number:	4	Supported Phase:	Production
Type:	Other	Award Date:	September 21, 2017
Latest Modification Date:	-	Definitization Date:	October 1, 2017
Latest Modification No.:	-	Work Start Date:	-
Technical Data Rights:	-		

Notes:

CUI data in this SAR section has been eliminated. This data is available upon Congressional request to OUSD(A&S).
 Cost and Schedule Variance reporting is not required on (CPFF) contract CLINs.

Initial Price (TY\$M) Target / Ceiling		Current Price (TY\$M) Target / Ceiling		Estimate at Completion (TY\$M) Contractor / PM		Initial Quantity	Current Quantity	Delivered Quantity
682.7	-	2,259.2	-	-	-	-	-	-

(U) Production**(U) Low-Rate Initial Production**

	Original LRIP Determination	Current LRIP Determination
Total LRIP Quantity	12	12
Date	1/4/2017	1/4/2017
Reference	Milestone B ADM	Milestone B ADM
LRIP Period	FY 2021 - 2035	FY 2021 - 2035
Total Procurement Quantity	12	12
LRIP Percentage of Total	100.0%	100.0%

Rationale if LRIP Quantity Exceeds 10% of Total Procurement Quantity (Current Determination)

The Current Total LRIP Quantity is more than 10% of the total production quantity in accordance with the Milestone B ADM approved January 4, 2017, which approved a LRIP quantity of 12, which is the total buy necessary due to the earliest date at which Operational Test and Evaluation could be conducted on the lead ship.

LRIP Notes

None

(U) Deliveries and Expenditures

(U) Acquisition Funding

	Total Estimate	Actual to Date	Actual, Percent Complete
Years Appropriated	36	17	47.2%
Appropriations (TY, \$M)	139,716.8	37,748.8	27.0%
Expenditures (TY, \$M)	139,716.8	26,146.8	18.7%

(U) End Items Delivered

	Total Required	Planned to Date	Actual to Date	Actual, Percent Complete
Procurement	12			
Total	12	-	-	-

Notes

The above data is current as of 12/31/2023 and reflects FY24 appropriated.

(U) International Program Aspects

General Memo

None

Exportability and Business Issues

N/A

Is design for international exportability planned? - Industry/Partner Exportability Cost-Sharing? -

Program Protection: Technology Security and Foreign Disclosure Issues

N/A

(U) Agreements

No International Agreements have been defined for SSBN 826



Serco Business

UNCLASSIFIED

**Modernized
Selected Acquisition Report
Supplement**

**SSBN 826 COLUMBIA Class Submarine
(SSBN 826)**

FY 2025 President's Budget
As of: December 31, 2023

UNCLASSIFIED

MSAR Supplement Sections

Program Description

Program Use of the Adaptive Acquisition Framework

Technologies and Systems Engineering

Funding Sources (Acquisition)

Funding Sources (Operating and Support)

Acquisition Estimate and Quantity Summary

Annual Acquisition Estimates by Appropriation Account

Acquired System Annual End-Item Quantities by Appropriation Account

Nuclear Costs

Operational Fielding Plan

O&S Independent Cost Estimate

Annual Operating and Support Estimates by Cost Element

Program Description

Full Name

SSBN 826 COLUMBIA Class Submarine

Short Name

SSBN 826

PNO

444

Lead Component

Navy

AAF Pathway

MCA

Acquisition Type

MDAP

Acquired Systems

SSBN 826

Related Programs

Full Name	PNO	Pathway	Type	ACAT/ BCAT	Acquisition Status	Costs in SAR?	
						Acq	O&S

Program Use of the Adaptive Acquisition Framework

This acquisition is accomplished by a single program in the Major Capability Acquisition Pathway.

Technologies and Systems Engineering

SSBN 826 COLUMBIA Class Submarine

Major Software Efforts

Title	Status	Fielding Date	Description
N/A			

Major Engineering Changes

Title	Original Need Date	Fielding Date	Description, Rationale and Program Impacts
N/A			

Funding Sources (Acquisition)

Acquisition Funding Notes

SSBN 826 program includes SCN, NSBDF, OF/PD, RDTE, OPN, and MCN funding.

SSBN 826 COLUMBIA Class Submarine

Category	Account	BA	Line Item	Program Element	RDT&E Project	Shared	Sunk
Procurement	1611N	01	1045 - OHIO Replacement Submarine	0101221N	-		
Note: LI 1045 is the "COLUMBIA Class Submarine" program (previously OHIO Replacement); PE is shared, SCN LI is not shared							
Procurement	1611N	05	5110 - Outfitting	0101221N	-	x	
Procurement	1810N	04	5358 - Strategic Missile Systems Equip	0101221N	-	x	
RDT&E	1319N	04	0603595N - Ohio Replacement	0603595N	3220 - COLUMBIA Class Submarine Development		
Note: LI is "SSBN New Design"							
RDT&E	1319N	04	0603595N - Ohio Replacement	0603595N	3440 - SBSD Obsolescence		
Note: LI is "SSBN New Design"							
RDT&E	1319N	04	0603595N - Ohio Replacement	0603595N	3441 - SBSD Technology Refresh		
Note: LI is "SSBN New Design"							
RDT&E	1319N	04	0603595N - Ohio Replacement	0603595N	9999 - Congressional Add		
Note: FY23 CLB RDTE Congressional Adds C909 (+\$8M) maps to PE/LI 0101221N and C895 (+\$2.75M) maps to PE/LI 0605013N, but values are included in PE 0603595N for completeness; UK funded RDTE is also captured in this "miscellaneous" line							
RDT&E	1319N	04	0603570N - Advanced Nuclear Power Systems	0603570N	3219 - SBSD Nuclear Technology Development		
MILCON	1205N	03	64482044 - MCON Planning and Funds	0901211N	-	x	
MILCON	1205N	02	64481400 - Unspecified Minor Construction	0901211N	-	x	
MILCON	1205N	01	68436818 -	0805976N	-		
Note: Columbia Submarine Trident Training Fac Expansion							
MILCON	1205N	01	68436817 -	0703676N	-		
Note: Columbia Submarine Repair Facility Expansion - Bangor							
MILCON	1205N	01	42237684 - Trident Refit Facility Expansion (Columbia Su	0712876N	-		

SSBN 826 COLUMBIA Class Submarine

Category	Account	BA	Line Item	Program Element	RDT&E Project	Shared	Sunk
MILCON	1205N	01	42237676 - Trident Training Fac. Columbia Trainer Expan.	0805976N	-		
MILCON	1205N	01	32414547 - Ohio Replacement Power & Propulsion Facility	0805376N	-		x
RDT&E	1319N	04	0603561N - Advanced Submarine System Development	0603561N	3220 - COLUMBIA Class Submarine Development		x
RDT&E	1319N	04	0603595N - Ohio Replacement	0603595N	3237 - Launch Test Facility		x

Funding Sources (Operating and Support)

Note: Budget lines fund activities executed by the Program Office or Sustainment Office.

Operating and Support Funding Notes

COLUMBIA currently is only receiving OMN funding in the PB25 FYDP.

SSBN 826 COLUMBIA Class Submarine

Category	Account	BA	Line Item	Program Element	RDT&E Project	Shared	Sunk
O&M	1804N	01	1B2B - Ship Operations Support & Training	0101228N	-		

Note: Falls under PMS 396

Acquisition Estimate and Quantity Summary

SSBN 826 COLUMBIA Class Submarine

Acquisition Estimates

Category	PB 2025	TY (\$M)	Current Base Year	Original Base Year	Report Fiscal Year
			CY2017 (\$M)	CY2017 (\$M)	CY2024 (\$M)
RDT&E		13,938.2	13,044.0	13,044.0	16,276.6
Procurement		125,320.2	85,711.2	85,711.2	106,951.8
MILCON		458.4	341.9	341.9	426.6
O&M		-	-	-	-
Total Acquisition		139,716.8	99,097.1	99,097.1	123,655.0
PAUC		11,643.070	8,258.091	8,258.091	10,304.581
APUC		10,443.354	7,142.599	7,142.599	8,912.652

Acquisition End-Item Quantities

System	PB 2025	Development	Procurement
SSBN 826		-	12
Total		-	12

Unit Description

Notes: Procurement costs exclude supplier development and SIB funding.

FY23 CLB RDTE Congressional Adds C909 (+\$8M) maps to PE/LI 0101221N and C895 (+\$2.75M) maps to PE/LI 0605013N, but are included in PE 0603595N for completeness.

MCN budget excludes \$9M (TY) in FY24 for Unspecified Minor Construction as this also covers non-CLB specific projects. Additionally, FY25-27 removes N4 scope portion of construction projects. In previous years, 55% of P684 TRF Kings Bay scope and 73% of P817 TRF Bangor scope was programmed by N4. This N4 effort has been temporarily removed from the budget table to align with prior agreed upon scope from the APB for an accurate comparison.

Current and Future Years Defense Program Summary, TY(\$M)

Appropriation	Prior	2024	2025	2026	2027	2028	2029	To Complete	Total
RDT&E	11,462.2	341.5	234.0	251.1	240.5	229.9	174.1	1,004.9	13,938.2
Procurement	20,399.2	5,506.4	7,690.7	9,214.4	9,540.0	9,871.1	9,482.1	53,616.4	125,320.2
MILCON	130.9	0.9	51.8	72.8	201.8	0.0	0.2	-	458.4
O&M	-	-	-	-	-	-	-	-	-
PB 2025 Total	31,992.3	5,848.9	7,976.4	9,538.3	9,982.3	10,101.0	9,656.4	54,621.3	139,716.8

Annual Acquisition Estimates by Appropriation Account

(Aligned to Budget Position: PB 2025)

SSBN 826 COLUMBIA Class Submarine

Source for TY\$-CY\$ Conversion: ASN FMB-6 Inflation Rates and Outlay Factors for DA, DoN and DW accounts: 17 Jan 2024

1319N - Research, Development, Test & Eval, Navy					
fiscal year		Other/ Unallocated	Total TY(\$M)	Weighted Rate	Total CY2017 (\$M)
Total		13,938.2	13,938.2	-	13,044.0
2008		62.700	62.7	0.887392	70.7
2009		140.300	140.3	0.898786	156.1
2010		463.500	463.5	0.912268	508.1
2011		627.300	627.3	0.934050	671.6
2012		957.200	957.2	0.949541	1,008.1
2013		727.400	727.4	0.959512	758.1
2014		1,125.200	1,125.2	0.973069	1,156.3
2015		1,256.600	1,256.6	0.985313	1,275.3
2016		1,367.000	1,367.0	1.003600	1,362.1
2017		1,116.300	1,116.3	1.022378	1,091.9
2018		1,090.700	1,090.7	1.047421	1,041.3
2019		768.200	768.2	1.067594	719.6
2020		588.800	588.8	1.106854	532.0
2021		407.600	407.6	1.156600	352.4
2022		362.100	362.1	1.217024	297.5
2023		401.300	401.3	1.253255	320.2
2024		341.500	341.5	1.281864	266.4
2025		234.000	234.0	1.309056	178.8
2026		251.100	251.1	1.336546	187.9
2027		240.500	240.5	1.364614	176.2
2028		229.900	229.9	1.393271	165.0
2029		174.100	174.1	1.422529	122.4
2030		114.300	114.3	1.452403	78.7
2031		101.700	101.7	1.482903	68.6
2032		100.900	100.9	1.514044	66.6
2033		103.200	103.2	1.545839	66.8
2034		105.600	105.6	1.578301	66.9
2035		108.100	108.1	1.611446	67.1
2036		47.700	47.7	1.645286	29.0
2037		49.400	49.4	1.679837	29.4
2038		51.100	51.1	1.715114	29.8
2039		52.900	52.9	1.751131	30.2
2040		54.700	54.7	1.787905	30.6
2041		56.700	56.7	1.825451	31.1
2042		58.600	58.6	1.863785	31.4

Annual Acquisition Estimates by Appropriation Account

(Aligned to Budget Position: PB 2025)

SSBN 826 COLUMBIA Class Submarine

Source for TY\$-CY\$ Conversion: ASN FMB-6 Inflation Rates and Outlay Factors for DA, DoN and DW accounts: 17 Jan 2024

1611N (BLS Hist) - Shipbuilding and Conversion, Navy									
fiscal year	End Item Recurring Flyaway	Non-End Item Recurring Flyaway	Non-Recurring Flyaway	Initial Spares	Depot Activation	Other/ Unallocated	Total TY(\$M)	Weighted Rate	Total CY2017 (\$M)
Total	116,225.6	-	6,268.5	-	-	1,040.6	123,534.7	-	84,522.7
2008							-	0.849880	-
2009							-	0.875879	-
2010							-	0.906310	-
2011							-	0.936042	-
2012							-	0.957515	-
2013							-	0.977541	-
2014							-	0.997336	-
2015							-	1.020322	-
2016							-	1.046414	-
2017	13.600		759.500			-	773.1	1.076431	718.2
2018	120.400		741.400			-	861.8	1.111495	775.4
2019	2,417.400		628.700			-	3,046.1	1.152852	2,642.2
2020	948.200		727.300			-	1,675.5	1.200357	1,395.8
2021	3,016.500		1,004.300			-	4,020.8	1.248889	3,219.5
2022	3,579.500		1,087.500			-	4,667.0	1.292497	3,610.8
2023	3,997.000		1,319.800			-	5,316.8	1.322912	4,019.0
2024	5,434.300		-			10.700	5,445.0	1.351292	4,029.5
2025	7,603.200		-			30.700	7,633.9	1.379719	5,532.9
2026	9,019.400		-			34.000	9,053.4	1.408693	6,426.8
2027	9,477.900		-			17.200	9,495.1	1.438276	6,601.7
2028	9,649.100		-			54.700	9,703.8	1.468480	6,608.1
2029	9,240.700		-			74.400	9,315.1	1.499318	6,212.9
2030	10,173.900		-			81.500	10,255.4	1.530803	6,699.4
2031	10,113.000		-			84.400	10,197.4	1.562950	6,524.5
2032	9,819.300		-			85.800	9,905.1	1.595772	6,207.1
2033	8,465.300		-			91.200	8,556.5	1.629283	5,251.7
2034	6,723.800		-			89.300	6,813.1	1.663498	4,095.6
2035	5,314.400		-			91.000	5,405.4	1.698432	3,182.6
2036	190.200		-			92.700	282.9	1.734099	163.1
2037	185.700		-			93.600	279.3	1.770515	157.8
2038	183.200		-			79.900	263.1	1.807696	145.5
2039	189.000		-			28.100	217.1	1.845657	117.6
2040	188.100		-			1.400	189.5	1.884416	100.6
2041	157.700		-			-	157.7	1.923989	82.0
2042	4.800		-			-	4.8	1.964393	2.4

Annual Acquisition Estimates by Appropriation Account

(Aligned to Budget Position: PB 2025)

SSBN 826 COLUMBIA Class Submarine

Source for TY\$-CY\$ Conversion: ASN FMB-6 Inflation Rates and Outlay Factors for DA, DoN and DW accounts: 17 Jan 2024

1810N - Other Procurement, Navy									
fiscal year	End Item Recurring Flyaway	Non-End Item Recurring Flyaway	Non-Recurring Flyaway	Initial Spares	Depot Activation	Other/ Unallocated	Total TY(\$M)	Weighted Rate	Total CY2017 (\$M)
Total	-	-	-	1,105.9	89.2	590.4	1,785.5	-	1,188.5
2008							-	0.895847	-
2009							-	0.907656	-
2010							-	0.925199	-
2011							-	0.938728	-
2012							-	0.953663	-
2013							-	0.966722	-
2014							-	0.979587	-
2015							-	0.993714	-
2016							-	1.011703	-
2017							-	1.033192	-
2018							-	1.056737	-
2019							-	1.082380	-
2020							-	1.120493	-
2021							-	1.175308	-
2022				13.635	-	10.348	24.0	1.225155	19.6
2023				-	-	14.071	14.1	1.260622	11.2
2024				39.439	13.799	8.197	61.4	1.289197	47.7
2025				31.725	13.799	11.249	56.8	1.316536	43.1
2026				34.530	16.197	110.278	161.0	1.344183	119.8
2027				36.631	0.000	8.242	44.9	1.372411	32.7
2028				24.328	14.090	128.907	167.3	1.401232	119.4
2029				126.564	14.090	26.302	167.0	1.430658	116.7
2030				194.843	17.261	12.967	225.1	1.460702	154.1
2031				37.821	-	17.132	55.0	1.491376	36.8
2032				28.081	-	6.893	35.0	1.522695	23.0
2033				73.771	-	48.962	122.7	1.554672	78.9
2034				58.380	-	60.331	118.7	1.587320	74.8
2035				61.409	-	38.354	99.8	1.620654	61.6
2036				48.744	-	37.121	85.9	1.654687	51.9
2037				52.935	-	26.060	79.0	1.689436	46.8
2038				66.379	-	15.584	82.0	1.724914	47.5
2039				58.690	-	9.407	68.1	1.761137	38.7
2040				48.703	-	-	48.7	1.798121	27.1
2041				36.015	-	-	36.0	1.835882	19.6
2042				21.609	-	-	21.6	1.874435	11.5
2043				11.673	-	-	11.7	1.913798	6.1

Annual Acquisition Estimates by Appropriation Account (Aligned to Budget Position: PB 2025)

SSBN 826 COLUMBIA Class Submarine

Source for TY\$-CY\$ Conversion: ASN FMB-6 Inflation Rates and Outlay Factors for DA, DoN and DW accounts: 17 Jan 2024

1205N - Military Construction, Navy					
fiscal year		Other/ Unallocated	Total TY(\$M)	Weighted Rate	Total CY2017 (\$M)
Total		458.4	458.4	-	341.9
2008			-	0.898414	-
2009			-	0.910724	-
2010			-	0.933517	-
2011			-	0.954485	-
2012			-	0.968588	-
2013			-	0.982386	-
2014			-	0.997121	-
2015		24.349	24.3	1.025225	23.7
2016		-	-	1.049119	-
2017		1.422	1.4	1.076142	1.3
2018		2.416	2.4	1.116079	2.2
2019		30.243	30.2	1.159013	26.1
2020		-	-	1.207954	-
2021		2.124	2.1	1.249931	1.7
2022		1.959	2.0	1.278042	1.5
2023		68.422	68.4	1.307729	52.3
2024		0.937	0.9	1.335748	0.7
2025		51.750	51.8	1.363870	37.9
2026		72.756	72.8	1.392511	52.2
2027		201.806	201.8	1.421754	141.9
2028		0.000	0.0	1.451611	0.0
2029		0.210	0.2	1.482095	0.1

Acquired System Annual End-Item Quantities by Appropriation Account

(Aligned to Budget Position: PB 2025)

SSBN 826 COLUMBIA Class Submarine

1611N (BLS Hist) - Shipbuilding and Conversion, Navy				
fiscal year	SSBN 826			Total
Total	12			12
2021	1			1
2022				-
2023				-
2024	1			1
2025				-
2026	1			1
2027	1			1
2028	1			1
2029	1			1
2030	1			1
2031	1			1
2032	1			1
2033	1			1
2034	1			1
2035	1			1

Nuclear Costs

SSBN 826 COLUMBIA Class Submarine

Program's Use of Department of Energy Resources

All nuclear costs are captured within the Navy funding line.

Operational Fielding Plan

SSBN 826 COLUMBIA Class Submarine

System: SSBN 826

Fielding and Inventory Notes

Ready for Patrol (fielded) of first hull is outside the FYDP.

SSBN 826 Fielding Plan and Inventory

fiscal year	Store	Field	Expend/Loss	Decommission	Inventory
2023					
2024					-
2025					-
2026					-
2027					-
2028					-
2029					-

O&S Independent Cost Estimate

SSBN 826 COLUMBIA Class Submarine

Independent and Current Cost Estimate Comparison

Category	CY2017 (\$M)	Independent Cost Estimate 11/4/2016	Current Estimate 11/15/2023	Variance with ICE (%)
Unit-Level Manpower			16,281.6	-
Unit Operations			1,282.3	-
Maintenance			19,077.1	-
Sustaining Support			3,073.9	-
Continued System Improvements			17,034.0	-
Other			7,253.8	-
Total O&S		58,800.0	64,002.6	9%

Independent Cost Estimate Source

Event: Milestone B
 Type: Independent Cost Estimate
 Approved by: OSD Cost Assessment & Program Evaluation, November 4, 2016
 Note: CAPE conducted ICE for Milestone B, finalized 11/4/2016. Lower categories are not available. Total CAPE ICE for O&S is \$58.8B.

Current Cost Estimate Source

Type: Program Office Estimate
 Approved by: Program Office, November 15, 2023
 Note: Annual Cost Estimate completed by NAVSEA 05C in November 2023. "Other" includes disposal costs. Reflects costs through FY85.

Cost Estimate Variance Explanation

Driven by updates to rates and inflation

Annual Operating and Support Estimates by Cost Element

SSBN 826 COLUMBIA Class Submarine

System: SSBN 826

Source for TY-CY Conversion: PB25 JIC

Operating and Support Cost Elements							
fiscal year	1.0 Unit-Level Manpower	2.0 Unit Operations	3.0 Maintenance	4.0 Sustaining Support	5.0 Continuing System Improvements	Other	Total CY2017 (\$M)
Total	16,281.6	1,282.3	19,077.1	3,073.9	17,034.0	7,253.8	64,002.6
2024	1.604	-	-	0.086	-	0.491	2.2
2025	9.529	-	-	0.734	-	3.013	13.3
2026	19.285	-	-	11.336	-	6.238	36.9
2027	30.322	0.360	-	14.673	-	10.415	55.8
2028	39.475	1.550	32.794	32.799	68.050	13.377	188.0
2029	50.592	2.225	32.794	35.274	85.772	17.010	223.7
2030	71.834	15.551	32.794	40.461	137.182	24.450	322.3
2031	94.531	12.845	63.129	39.635	141.505	31.919	383.6
2032	127.052	4.420	71.419	45.502	237.139	43.174	528.7
2033	159.847	14.117	106.946	48.849	272.638	54.505	656.9
2034	191.978	18.342	141.897	51.795	301.243	65.636	770.9
2035	224.058	22.994	176.253	55.982	350.467	76.737	906.5
2036	256.188	23.489	210.522	59.044	290.442	87.872	927.6
2037	286.704	20.128	245.053	62.048	379.162	98.436	1,091.5
2038	317.094	23.643	298.124	65.123	294.995	108.944	1,107.9
2039	343.938	26.232	310.778	66.941	414.854	118.342	1,281.1
2040	360.661	31.626	345.385	68.020	510.805	124.480	1,441.0
2041	364.680	26.322	396.292	66.069	361.957	126.090	1,341.4
2042	364.680	28.090	404.376	59.357	412.546	126.090	1,395.1
2043	364.680	17.891	404.376	59.357	361.946	126.090	1,334.3
2044	364.680	21.027	406.211	59.357	580.501	126.090	1,557.9
2045	364.680	22.343	406.211	59.357	287.645	126.090	1,266.3
2046	364.680	21.281	406.211	59.357	360.495	126.090	1,338.1
2047	364.680	17.594	406.211	59.357	376.865	126.090	1,350.8
2048	364.680	19.353	475.262	59.357	351.518	126.090	1,396.3
2049	364.680	47.235	521.295	59.357	376.043	126.090	1,494.7
2050	364.680	23.930	404.376	59.357	359.695	126.090	1,338.1
2051	364.680	44.549	464.904	59.357	358.983	126.090	1,418.6
2052	364.680	19.034	510.840	59.357	495.764	126.090	1,575.8
2053	364.680	45.496	479.000	59.357	438.568	126.090	1,513.2
2054	364.680	47.459	581.041	59.357	434.456	126.090	1,613.1
2055	364.680	47.462	580.895	59.357	430.155	126.090	1,608.6
2056	364.680	45.768	583.633	59.357	447.823	126.090	1,627.4

System: SSBN 826

Source for TY-CY Conversion: PB25 JIC

Operating and Support Cost Elements							
fiscal year	1.0 Unit-Level Manpower	2.0 Unit Operations	3.0 Maintenance	4.0 Sustaining Support	5.0 Continuing System Improvements	Other	Total CY2017 (\$M)
2057	364.680	45.652	594.817	59.357	441.729	126.090	1,632.3
2058	364.680	47.056	594.046	59.357	451.975	126.090	1,643.2
2059	364.680	44.781	600.297	59.357	510.581	126.090	1,705.8
2060	364.680	49.417	579.595	59.357	495.420	126.090	1,674.6
2061	364.680	45.515	579.036	59.357	364.630	126.090	1,539.3
2062	364.680	48.278	555.493	59.357	412.965	126.090	1,566.9
2063	364.680	18.201	397.739	59.357	309.359	126.090	1,275.4
2064	364.680	21.254	404.376	59.357	329.540	126.090	1,305.3
2065	364.680	22.742	404.376	59.357	280.278	126.090	1,257.5
2066	364.680	21.761	406.211	59.357	299.772	126.090	1,277.9
2067	364.680	17.594	406.211	59.357	346.985	126.090	1,320.9
2068	364.680	19.665	406.211	59.357	330.567	126.090	1,306.6
2069	364.680	20.316	406.211	59.357	273.221	126.090	1,249.9
2070	354.997	22.915	389.814	58.208	298.204	258.860	1,383.0
2071	338.360	17.336	373.417	57.092	230.636	116.956	1,133.8
2072	334.290	17.263	371.582	57.092	295.422	115.582	1,191.2
2073	326.121	15.744	359.479	55.646	310.361	248.876	1,316.2
2074	308.735	16.288	319.809	54.621	229.818	106.713	1,036.0
2075	290.261	15.779	297.582	52.351	192.477	236.466	1,084.9
2076	260.639	11.886	262.055	49.918	193.496	226.197	1,004.2
2077	227.841	9.837	227.685	47.225	128.457	214.857	855.9
2078	194.775	9.038	193.065	43.619	145.936	338.540	925.0
2079	160.410	4.249	156.160	41.478	82.865	192.544	637.7
2080	126.532	3.462	122.068	39.061	58.952	179.835	529.9
2081	95.349	2.060	90.435	36.342	45.709	169.053	438.9
2082	63.612	1.282	56.410	33.757	38.498	158.080	351.6
2083	32.543	0.552	23.900	21.096	16.910	147.338	242.3
2084	6.675	-	-	-	-	2.276	9.0