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Oct 08, 2024

Department of Defense  
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

# **Modernized Selected Acquisition Report (MSAR)**

## **SSN 774 Virginia Class Submarine (SSN 774)**

FY 2025 President's Budget

Effective: December 31, 2023

Defense Acquisition Visibility Environment

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**(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**

<b>Full Name</b> SSN 774 Virginia Class Submarine	<b>Short Name</b> SSN 774
<b>PNO</b> 516	<b>Milestone Decision Authority</b> Component Acquisition Executive
<b>Lead Component</b> Department of the Navy	<b>Program Executive Office</b> PEO Submarines
<b>Joint Program</b> No	<b>Acquisition Type</b> Major Defense Acquisition Program
<b>Adaptive Acquisition Pathway</b> Major Capability Acquisition	<b>Acquired Systems</b> SSN 774 Q1 FY21
<b>Acquisition Category</b> IC	
<b>Acquisition Status</b> Active Acquisition	

**Mission**

The VIRGINIA Class (SSN 774) Submarine Program is bringing forward a critical national security asset designed to flexibly address the unique multi-mission requirements of the post-Cold War era. Capable of performing traditional submarine missions, dominating the littoral battle space and adapting to future requirements, the VIRGINIA Class Submarine satisfies any assigned role well into the Twenty-First Century. Replacing the fleet of SSN 688 Class submarines, the VIRGINIA Class Submarine is characterized by state-of-the-art stealth, enhanced features for special operations forces, and cost effective Command, Control, Communication and Intelligence capability. With an array of armament including the MK48 Advanced Capability torpedo and cruise missile vertical launch capability, the VIRGINIA Class Submarine maintains total undersea superiority.

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

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**Program Manager**

SSN 774 Virginia Class Submarine PMO

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## (U) Executive Summary

### Program Highlights Since Last Report

The VIRGINIA Class Submarine (VCS) Program is at Full Rate Production (FRP). A total of 22 VIRGINIA Class Submarines have been delivered with 16 more under contract.

Three new construction deliveries are planned for 2024: NEW JERSEY (SSN 796) in April, IOWA (SSN 797) in October, and MASSACHUSETTS (SSN 798) in December, with SSN 798 having some risk to meet this date. Additionally, two hulls are expected to complete post shakedown availability and re-deliver to the Fleet in 2024: USS OREGON (SSN 793) and USS MONTANA (SSN 794).

The President's Budget request for FY 2025 (PB25) funds one VCS in FY 2025- the first of 9 VCS of the FY 2025-2029 multi-year procurement (MYP). PB25 also retains prior year Advance Procurement (AP) and Economic Order Quantity (EOQ) funding for two SSNs to maintain a stable and credible demand signal with industry, enable ongoing recovery and improvement efforts across the Submarine Industrial Base (SIB), and to support the ramp to a production rate of 1 COLUMBIA Class (CLB) and 2 VCS per year by CY 2028. Additionally, the FY 2025 budget request includes AP funding for the FY 2026 and FY 2027 planned Block VI submarine procurements, Economic Order Quantity (EOQ) for the FY 2026-2029 planned Block VI submarine procurements, and completion of prior year shipbuilding funds (cost-to-complete) for the Government share of cost overruns for SSNs 798-800.

Overall, VCS construction performance continues to be challenged to meet Fleet force structure requirements. The Navy is working closely with shipbuilders to stabilize and improve performance in the industrial base and at the shipbuilders. One enabler for this is continued investments throughout the submarine industrial base to provide stability to achieve the 1 + 2 production rate by 2028.

This report reflects a previously reported Schedule Milestone breach for VIRGINIA Payload Module (VPM) Initial Operational Capability (IOC) due to delivery delays on SSN 803, the first VPM hull.

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

### (U) History of Significant Developments Since Program Inception

Date	Description
March 2021	The FY 2021 NDAA and Defense Appropriations Act added a 2nd submarine in FY 2021, which the Navy awarded on March 19, 2021, increasing the total Block V contract to 10 submarines.
December 2019	The Navy signed a Block V Construction Contract on December 02, 2019 with General Dynamics Electric Boat and Huntington Ingalls Industries-Newport News for 9 VIRGINIA Class Submarines (8 with VPM) and a priced option for a 10th submarine. In accordance with the NDAA of FY 2019, the contract also includes unpriced options to procure a VIRGINIA Class Submarine in FY 2022 and FY 2023.
February 2017	On February 13, 2017, an APB was signed by the acting Assistant Secretary of the Navy (Research, Development & Acquisition) reflecting an increase in the number of submarines from 30 to 48. The baseline update includes the VPM and Acoustic Superiority (AS) on Block V and follow ships.
April 2014	The Navy signed a Block IV Construction Contract to build ten VIRGINIA Class Submarines

Date	Description
	with General Dynamics Electric Boat and Huntington Ingalls Industries-Newport News. Under the five-year agreement, Electric Boat and Newport News Shipbuilding would jointly build two ships per year from FY 2014 - FY 2018.
January 2012	The initial Concept Design for the Virginia Payload Module (VPM) was completed.
October 2010	The program accelerated to Full Rate Production of two ships per year.
September 2010	The program achieved Milestone III. The ADM was signed by the USD (AT&L) and included a declaration of Full Operational Capability and authorization of Full Rate Production.
December 2008	The Navy awarded the Block III construction contract to General Dynamics Electric Boat and Northrop Grumman Newport News for the construction of eight VIRGINIA Class submarines from FY 2009 through FY 2013.
March 2007	The program achieved IOC although USS VIRGINIA first deployed operationally in the fall of 2005 in support of the Global War on Terror.
June 2006	USS TEXAS, which was essentially the second lead ship of the class, was the first submarine delivered at Northrop Grumman, Newport News in nearly ten years.
October 2004	Lead Ship delivery (USS VIRGINIA SSN 774). Delivery occurred within the original baseline schedule threshold set ten years earlier, in 1994.
January 2004	The transition to multi-year procurement for hulls six through ten was completed in January 2004 following approval by Congress in the FY 2004 NDAA and Defense Appropriations Act.
August 2003	In pursuit of the lowest possible future program costs, the Navy awarded the Block II construction contract with clauses to transition to a multi-year contract in FY 2004.
January 2001	Systems testing and integration started on the first Command and Control Systems Module (CCSM) at the Off-hull Assembly and Test Site (COATS). The COATS facility is used to test VIRGINIA Class CCSM units prior to shipyard delivery.
September 1998	The IPPD 96 Design Build contract with EB was modified to include construction of the first four VIRGINIA Class Submarines.
October 1997	The revised APB (Change 1 to the Development Baseline of June 30, 1995) was signed to reflect the co-construction teaming arrangement between EB and Newport News Shipbuilding (NNS) as mandated in the FY 1998 NDAA and Defense Appropriations Act.
May 1996	The Integrated Process and Product Development (IPPD) 1996 Design/Build Contract with Electric Boat (EB) Corporation was definitized.
April 1996	Contract award for the New Attack Submarine Command, Control, Communications and Intelligence (C3I) System was executed to Lockheed Martin Federal Systems.
June 1995	The New Attack Submarine Program successfully passed Milestone II with the signing of an ADM.
June 1995	A waiver from full-up, system-level live fire testing was approved jointly by USD (A&T&L) and the Director, Operational Test & Evaluation with notification letters sent to Congressional Defense Committees on June 29, 1995.
December 1994	Milestone I APB established.
August 1994	Milestone I was approved for the New Attack Submarine (NSSN) following two years of extensive review of requirements and rigorous systems definition effort.
August 1992	Milestone 0 for Centurion Submarine, the first submarine designed with affordability considerations paramount. Conceptualized as a lower cost alternative to SEAWOLF Class.



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

Events		APB Change 1 (Current) 2/13/2017 Objective / Threshold		Current Estimate 12/31/2023	Actual
Lead Ship Delivery (2)	First Asset Delivery	Jun 2004	Dec 2004	Oct 2004	-
<b>Related Programs</b>					
<b>NSSN COMMAND AND CONTROL SYSTEM</b>					
FY 1995 Open Architecture Demo Complete	Other	Oct 1995	Apr 1996	Sept 1995	-
C&CS Module Start Fabrication (2)	Other	Jun 1999	Dec 1999	Jun 1999	-
LBTS Integration and Test Complete	Other	Apr 2002	Oct 2002	Apr 2002	-
GFE C&CS Delivered to Shipyard (2)	Other	Dec 2000	Jun 2001	Dec 2000	-
C&CS Module delivered to ship	Other	May 2002	Nov 2002	May 2002	-
Intermediate Support (by IOC)	IOC	Jan 2006	Jul 2006	Jun 2006	-
Program Review (LRIP) (2)	LRIP Decision	Sept 1997	Mar 1998	Jan 1997	-
Milestone I	MS I	Aug 1994	Feb 1995	Aug 1994	-
<b>Initial Operational Test &amp; Evaluation</b>					
Complete	IOT&E	Sept 2008	Mar 2009	Mar 2009	-
Start	IOT&E	Feb 2008	Aug 2008	Jan 2008	-
Milestone II	MS II	Jun 1995	Dec 1995	Jun 1995	-
Depot Shipyard Support	OSC	Aug 2015	Feb 2016	Jun 2013	-
IOC (VPM Capable hulls)	IOC	Sept 2026	Sept 2028	-	-
LFT&E Shock Tests (2)	Other	Jun 2006	Dec 2006	-	-
Milestone III	MS III	Jul 2010	Jan 2011	Sept 2010	-
Organizational Support (by Fast Cruise)	OSC	Apr 2004	Oct 2004	Apr 2004	-
IOC (Lead Ship)	IOC	Nov 2006	May 2007	Mar 2007	-
Milestone 0	MDD	Aug 1992	Feb 1993	Aug 1992	-
New Attack Submarine Integrated Product and Process Development Contract Award	Other	Oct 1995	Apr 1996	Jan 1996	-

**Notes**

1. On December 04, 2006, the USD(AT&L) notified Congress of the decision to eliminate the VIRGINIA Class Ship Shock Test from the Live Fire Test and Evaluation portion of the VIRGINIA Class Test and Evaluation Master Plan.

2. PM is assessing VPM IOC based on revised projected delivery date for SSN 803.

**Schedule Baseline Deviation Explanation**

None

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

None

**(U) Performance**

*Additional information for this section is provided in the classified annex to this submission.*

**(U) Performance Attributes**

No Data

**(U) Requirement Source:**

Sponsor(s): None

**1. Document Type Not Provided**

Notes: ORD Rev A, Change 2 dated October 27, 2009 and CDD for VIRGINIA Class Submarine Strike dated 17 December 2013

**Notes**

Classified performance information is provided in the classified annex to this submission.

**Performance Deviation Explanation**

None

**(U) Acquisition Budget Estimate**

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

Category (\$M) Base Year: 1995	APB Change 1 (Current) 2/13/2017		Current Estimate PB 2025	
	CY\$ obs Objective / Threshold		CY\$ obs / TY\$ obs	
RDT&E	6,498.8	7,018.9	7,178.7*	9,615.1
Procurement	87,455.7	97,035.7	93,657.0	181,477.5
MILCON	348.8	383.7	498.3*	993.8
O&M	0.0	0.0	-	-
R&MF	-	-	-	-
Total Acquisition	94,303.3	-	101,334.0	192,086.4
Program Acquisition Unit Cost	1,964.652	2,175.798	1,986.941	3,766.400
Average Procurement Unit Cost	1,821.994	2,021.578	1,836.412	3,558.383
Program End-Item Quantity				
Development	0		-	
Procurement	48		51	
O&M-Acquired	-		-	

\* Baseline Deviation

**Budget Notes**

Budget Estimates use the PB 2025 Budget submission. Increases in MILCON and RDT&E reflect additional requirements beyond the 2017 APB. An APB update is in process.

**Quantity Notes**

None

**Cost Baseline Deviation Explanation**

Parameter	Explanation
Acquisition Cost (RDT&E)	Updates to RDT&E are attributable to the extension of the VIRGINIA Class procurement profile beyond the 48 hulls planned in the 2017 APB, to include the evaluation and development of capabilities/technologies for inclusion in VIRGINIA Class Block VI, as well as initial development for VIRGINIA Class Block VII.
Acquisition Cost (MILCON)	Updates to MILCON are attributable to refined cost estimates in support of various pier related changes, channel and turning basin changes, numerous locations requiring power upgrades, and additional Submarine Storage, Maintenance, and Operation Facilities (SSMOF) requirements as homeport locations are required to continue supporting both VIRGINIA (including VPM equipped hulls) and LOS ANGELES Class SSNs.

**(U) Risk and Sensitivity Analysis**

<b>Current Procurement Estimate Risks (12/31/2023)</b>	
1	FY 2025 includes Completion of Prior Year Shipbuilding Programs (cost to complete) funds for SSNs 798-800 (\$293.0M) to finance the Government responsible portion of the shipbuilding construction contract overrun.
<b>Current Baseline Risks (2/13/2017)</b>	
The Assistant Secretary of the Navy(Research, Development & Acquisition) endorsed the Navy's SCP and certified that the FYDP fully funded the Navy's SCP. Risk: In preparing the SCP, the NCCA identified three cost drivers: labor hour learning, the realization of Cost Reduction Initiatives savings, and the realization of MYP savings. This analysis determined that these were the variables whose changes would create the greatest changes in cost.	
<b>Original Baseline Risks (6/30/1995)</b>	
The original baseline estimate for the program is from the MSII decision of June 1995.	

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

Category (CY\$M) Base Year: 1995	Current Baseline 02/13/2017	Current Estimate PB 2025	% Change
Program Acquisition Unit Cost			
Acquisition Cost	94,303.3	101,334.0	
Program Quantity	48	51	
PAUC	1,964.652	1,986.941	1.13%
Average Procurement Unit Cost			
Procurement Cost	87,455.7	93,657.0	
Procurement Quantity	48	51	
APUC	1,821.994	1,836.412	0.79%

**(U) Current Estimate Compared with Original Baseline**

Category (CY\$M) Base Year: 1995	Original Baseline 06/30/1995	Current Estimate PB 2025	% Change
Program Acquisition Unit Cost			
Acquisition Cost	45,633.1	101,334.0	
Program Quantity	30	51	
PAUC	1,521.103	1,986.941	30.62% <i>Significant Cost Growth</i>
Average Procurement Unit Cost			
Procurement Cost	42,228.1	93,657.0	
Procurement Quantity	30	51	
APUC	1,407.603	1,836.412	30.46% <i>Significant Cost Growth</i>

**(U) Significant Cost Growth Details****Original Baseline PAUC Breach Explanation**

Congressional Notification was made in November 2021 with respect to a re-breach of program unit cost against the original APB established in 1995. The re-breach was at the Significant Nunn-McCurdy level (>30%). The program is evolving to stay ahead of the threat with additional capabilities and other updates outlined in the Tactical Submarine Evolution Plan. The APB was updated February 13, 2017 (current APB). Since the 2017 APB, additional RDT&E funds for platform design and development have been added to the program, resulting in a re-breach of PAUC and APUC to the original APB.

The increase since establishment of the original 1995 baseline is attributed to platform evolutions over the past 29 years to continue to pace the threat, most recently with development of the VIRGINIA Payload Module and other advanced undersea capabilities.

**Original Baseline APUC Breach Explanation**

Congressional Notification was made in November 2021 with respect to a re-breach of program unit cost against the original APB established in 1995. The re-breach was at the Significant Nunn-McCurdy level (>30%). The program is evolving to stay ahead of the threat with additional capabilities and other updates outlined in the Tactical Submarine Evolution Plan. The APB was updated February 13, 2017 (current APB). Since the 2017 APB, additional RDT&E funds for platform design and development have been added to the program, resulting in a re-breach of PAUC and APUC to the original APB.

The increase since establishment of the original 1995 baseline is attributed to platform evolutions over the past 29 years to continue to pace the threat, most recently with development of the VIRGINIA Payload Module and other advanced undersea capabilities.

**Actions taken or Proposed to Control Future Cost Growth**

VIRGINIA Class Program initiatives to achieve cost performance include the following:

- Modular design and construction for reduced cost and delivery time - Blocks I/II
- Replaced 12 vertical launch tubes with two payload tubes. Replaced air-backed sphere with Large Aperture Bow Array - Block III
- Leverage Multi-Year Procurement (MYP), block-buys to gain benefits from economic order quantity (EOQ) and signal future demand to the various tiers of the industrial base
- Incorporate Capital Expenditure (CAPEX) incentives across Block II, Block III, Block IV, and Construction Readiness Incentives on Block V to improve efficiency/capacity at both shipyards
- Investing in facilitization for critical suppliers, including purchase and upgrade of equipment and tooling; modernization and expansion of production facilities; and development and qualification of new suppliers
- Investing in workforce development; developing and enforcing new training and testing standards to control quality and support critical skillsets; and implementing corrective actions based on the results of in-depth supplier assessments, audits, and source receiving and inspection data.
- Tracking suppliers on the schedule's critical path, suppliers with past quality concerns, and those with large sub-award values in order to mitigate and avoid risks among critical suppliers.

**Status of Each Major Contract and Significant Factors Contributing to Cost and Schedule Variance; Projected Effects on Future Program Costs**

See Contracts section.

**Notes**

None

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

Category (\$M) Base Year: 1995	APB Change 1 (Current) 2/13/2017 CY\$ obs Objective / Threshold		Current Estimate CY\$ obs / TY\$ obs	
	Total O&S	60,744.3	66,818.7	57,903.4
Total Disposal	-	-	-	-

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

Type: Component Cost Position

Approved by: D, CAPE, November 04, 2016

**Disposal/Demilitarization Cost**

Type: No estimate. Not Applicable

**Operating and Support Baseline Deviation Explanation**

None

**Cost Notes****Disposal/Demilitarization Cost Estimate**

- Date of Estimate: November 04, 2016
- Source of Estimate: SCP
- Disposal/Demilitarization Total Cost (BY 1995 \$M): \$2,840.9
- Total program disposal costs are estimated to be \$8,946.0M TY.
- The Navy is updating the O&S estimates which will be included in an APB update.

**Sustainment Strategy**

- The baseline sustainment strategy of 48 SSN 774 VIRGINIA Class submarines has been updated for 3 depot, CNO availabilities allowing 12 deployments during the 33-year design life for each of the total force. The first deployment occurs after a Post Shakedown Availability (PSA) conducted at the private industry construction yard. The deployment rate is achieved through maintaining material readiness using maintenance periods including two Extended Drydocking Selected Restricted Availabilities (EDSRAs) and one Depot Maintenance Period (DMP) scheduled and planned according to the required maintenance periods for major equipment and systems. The EDSRAs and DMP are expected to be performed at Navy depot maintenance facilities such as the Naval shipyards but if needed can also be performed at one of the two private, nuclear repair shipyards that are also used for ship construction. Additional routine maintenance and repair are conducted throughout the submarine's life cycle at the homeport Navy intermediate maintenance facility. Changes to the equipment and system design are considered and implemented on a case-by-case basis to address issues that are identified and improve



sustainment performance.

SSN 688 Fiscal Years Operational reflect current estimates based on service life extensions of select LOS ANGELES Class hulls.

#### (U) Operating and Support Variance with Prior Estimate

No Data

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

(CY\$M) Base Year: 1995							
System	Unit-Level Manpower	Unit Operations	Maintenance	Sustaining Support	Continuing System Improvements	Other	Total
SSN 774	10,996.2	1,344.8	33,139.1	777.7	11,645.6	-	57,903.4
Program	10,996.2	1,344.8	33,139.1	777.7	11,645.6	-	57,903.4

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

(CY\$M) Base Year: 1995							
System	Unit-Level Manpower	Unit Operations	Maintenance	Sustaining Support	Continuing System Improvements	Other	Total
SSN 774	6.9	0.9	20.9	0.5	7.4	-	36.6
SSN 688 (Antecedent)	5.5	0.7	15.0	1.0	4.2	-	26.4

#### (U) Operating and Support Cost Estimate Assumptions

System	Quantity to Sustain	Unit Expected Service Life (Years)	Unit of Measure	Fiscal Years Operational
SSN 774	48	33.0	Total Quantity	2004 - 2065
SSN 688 (Antecedent)	62	33.0	Total Quantity	1976 - 2045

#### Additional O&S Estimate Assumptions

- The BY O&S Current Production APB Objective/Threshold and Current Estimate exclude Indirect Support costs of \$6,159.8M BY 1995, and Acoustic Superiority (AS) Backfit costs of \$1,485.9M BY 1995.
- The TY O&S Current Production APB Objective/Threshold and Current Estimate include Indirect Support costs of \$16,460.9M and TY AS Backfit costs of \$2,877.6M TY.

#### Antecedent Estimate Assumptions

The antecedent system is the SSN 688 LOS ANGELES Class Submarine program. Assembly of an

accurate compilation O&S cost estimate for the LOS ANGELES Class using actual cost data going back to 1976 when USS LOS ANGELES was commissioned and then projecting those costs out is problematic based on the availability and detail of the historic data. VIRGINIA Class O&S comparisons with the legacy class are hampered by changes in required attack submarine force size where the LOS ANGELES Class, at one time, had 62 submarines compared to the originally planned class size of 30 VIRGINIA Class submarines.

The source of antecedent data is the Naval Visibility and Management of Operating and Support Cost (VAMOSOC) database for LOS ANGELES Class submarines for the years 1984-2008. This data must be adjusted due to significant differences between the two classes, to achieve a comparable estimate. The LOS ANGELES Class was comprised of 62 ships with major design changes in blocks of ships that had an original planned life of 30 years. Some of these 62 ships were retired at mid-life and, therefore, did not incur normal life of ship maintenance and operating costs. SSN 688 Fiscal Years Operational reflect current estimates based on service life extensions of select LOS ANGELES Class hulls.

### O&S Annual Cost Calculation Memo

The total O&S cost estimate for the VIRGINIA Class is based on 48 ships over a 33-year life cycle timeframe; and it includes disposal cost. The estimate was calculated using the following formula.

- Total average annual cost per hull multiplied by the number of ships multiplied by the number of years of service life plus disposal costs.

$$VA \text{ Class: } (\$36.555 \times 48 \text{ ships} \times 33 \text{ years}) + \$2,840.9 = \$60,744.0$$

**(U) Performing Activities and Contracts****(U) External Government Activities**

None

**(U) Contracts and Efforts**

Contract Title	Contract Number / Effort	Contractor	Phase
Block IV	N00024-12-C-2115 (SSN 797) / 6	General Dynamics, EB Corporation	Production
Block IV	N00024-12-C-2115 (SSN 798) / 7	General Dynamics, EB Corporation	Production
Block IV	N00024-12-C-2115 (SSN 799) / 8	General Dynamics, EB Corporation	Production
Block IV	N00024-12-C-2115 (SSN 800) / 9	General Dynamics, EB Corporation	Production
Block IV	N00024-12-C-2115 (SSN 801) / 10	General Dynamics, EB Corporation	Production
Block V	N00024-17-C-2100 (SSN 802) / 1	General Dynamics, EB Corporation	Production
Block V	N00024-17-C-2100 (SSN 803) / 2	General Dynamics, EB Corporation	Production
Block V	N00024-17-C-2100 (SSN 804) / 3	General Dynamics, EB Corporation	Production
Block V	N00024-17-C-2100 (SSN 805) / 4	General Dynamics, EB Corporation	Production
Block V	N00024-17-C-2100 (SSN 806) / 5	General Dynamics, EB Corporation	Production
Block V	N00024-17-C-2100 (SSN 807) / 6	General Dynamics, EB Corporation	Production

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

<b>Contract Number:</b>	N00024-12-C-2115 (SSN 797)	<b>Order Number:</b>	-
<b>Contract Title:</b>	Block IV	<b>Strategy:</b>	-
<b>CAGE:</b>	General Dynamics - General Dynamics, EB Corporation	<b>Contracting Office:</b>	-
<b>City, State/Province:</b>	-		
<b>Effort Number:</b>	6	<b>Supported Phase:</b>	Production
<b>Type:</b>	Fixed-Price Incentive (Firm Target)	<b>Award Date:</b>	April 28, 2014
<b>Latest Modification Date:</b>	-	<b>Definitization Date:</b>	April 28, 2014
<b>Latest Modification No.:</b>	-	<b>Work Start Date:</b>	-

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
-	-	-	1	1	-

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

Contract Number: N00024-12-C-2115 (SSN 798)      Order Number: -  
 Contract Title: Block IV      Strategy: -  
 CAGE: General Dynamics - General Dynamics, EB Corporation      Contracting Office: -  
 City, State/Province: -  
 Effort Number: 7      Supported Phase: Production  
 Type: Fixed-Price Incentive (Firm Target)      Award Date: April 28, 2014  
 Latest Modification Date: -      Definitization Date: April 28, 2014  
 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
-	-	-	1	1	-

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

Contract Number: N00024-12-C-2115 (SSN 799)      Order Number: -  
 Contract Title: Block IV      Strategy: -  
 CAGE: General Dynamics - General Dynamics, EB Corporation      Contracting Office: -  
 City, State/Province: -  
 Effort Number: 8      Supported Phase: Production  
 Type: Fixed-Price Incentive (Firm Target)      Award Date: April 28, 2014  
 Latest Modification Date: -      Definitization Date: April 28, 2014  
 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
-	-	-	1	1	-

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

Contract Number: N00024-12-C-2115 (SSN 800) Order Number: -  
 Contract Title: Block IV Strategy: -  
 CAGE: General Dynamics - General Dynamics, EB Corporation Contracting Office: -  
 City, State/Province: -  
 Effort Number: 9 Supported Phase: Production  
 Type: Fixed-Price Incentive (Firm Target) Award Date: April 28, 2014  
 Latest Modification Date: - Definitization Date: April 28, 2014  
 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
-	-	-	1	1	-

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

Contract Number: N00024-12-C-2115 (SSN 801) Order Number: -  
 Contract Title: Block IV Strategy: -  
 CAGE: General Dynamics - General Dynamics, EB Corporation Contracting Office: -  
 City, State/Province: -  
 Effort Number: 10 Supported Phase: Production  
 Type: Fixed-Price Incentive (Firm Target) Award Date: April 28, 2014  
 Latest Modification Date: - Definitization Date: April 28, 2014  
 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
-	-	-	1	1	-

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

Contract Number: N00024-17-C-2100 (SSN 802) Order Number: -  
 Contract Title: Block V Strategy: -  
 CAGE: General Dynamics - General Dynamics, EB Corporation Contracting Office: -  
 City, State/Province: -

Effort Number: 1 Supported Phase: Production  
 Type: Fixed-Price Incentive (Firm Target) Award Date: December 2, 2019  
 Latest Modification Date: - Definitization Date: December 2, 2019  
 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
-	-	-	1	1	-

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

Contract Number: N00024-17-C-2100 (SSN 803) Order Number: -  
 Contract Title: Block V Strategy: -  
 CAGE: General Dynamics - General Dynamics, EB Corporation Contracting Office: -  
 City, State/Province: -

Effort Number: 2 Supported Phase: Production  
 Type: Fixed-Price Incentive (Firm Target) Award Date: December 2, 2019  
 Latest Modification Date: - Definitization Date: December 2, 2019  
 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
-	-	-	1	1	-

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

Contract Number: N00024-17-C-2100 (SSN 804) Order Number: -  
 Contract Title: Block V Strategy: -  
 CAGE: General Dynamics - General Dynamics, EB Corporation Contracting Office: -  
 City, State/Province: Groton, CT

Effort Number: 3 Supported Phase: Production  
 Type: Fixed-Price Incentive (Firm Target) Award Date: December 2, 2019  
 Latest Modification Date: - Definitization Date: December 2, 2019  
 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
-	-	-	1	1	-

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

Contract Number: N00024-17-C-2100 (SSN 805)      Order Number: -  
 Contract Title: Block V      Strategy: -  
 CAGE: General Dynamics - General Dynamics, EB Corporation      Contracting Office: -  
 City, State/Province: Groton, CT

Effort Number: 4      Supported Phase: Production  
 Type: Fixed-Price Incentive (Firm Target)      Award Date: December 2, 2019  
 Latest Modification Date: -      Definitization Date: December 2, 2019  
 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
-	-	-	1	1	-

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

Contract Number: N00024-17-C-2100 (SSN 806)      Order Number: -  
 Contract Title: Block V      Strategy: -  
 CAGE: -- General Dynamics, EB Corporation      Contracting Office: -  
 City, State/Province: Groton, CT

Effort Number: 5      Supported Phase: Production  
 Type: Fixed-Price Incentive (Firm Target)      Award Date: December 2, 2019  
 Latest Modification Date: -      Definitization Date: December 2, 2019  
 Latest Modification No.: -      Work Start Date: -  
 Technical Data Rights: -  
 Notes: This is the first time this contract is being reported.

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
-	-	-	1	1	-

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

<b>Contract Number:</b>	N00024-17-C-2100 (SSN 807)	<b>Order Number:</b>	-
<b>Contract Title:</b>	Block V	<b>Strategy:</b>	-
<b>CAGE:</b>	-- General Dynamics, EB Corporation	<b>Contracting Office:</b>	-
<b>City, State/Province:</b>	Groton, CT		
<b>Effort Number:</b>	6	<b>Supported Phase:</b>	Production
<b>Type:</b>	Fixed-Price Incentive (Firm Target)	<b>Award Date:</b>	December 2, 2019
<b>Latest Modification Date:</b>	-	<b>Definitization Date:</b>	December 2, 2019
<b>Latest Modification No.:</b>	-	<b>Work Start Date:</b>	-
<b>Technical Data Rights:</b>	-		
<b>Notes:</b>	This is the first time this contract is being reported.		

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
-	-	-	1	1	-



**(U) Production**

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

	Original LRIP Determination	Current LRIP Determination
Total LRIP Quantity	14	14
Date	6/30/1995	6/30/1995
Reference	MSII ADM	MSII ADM
LRIP Period	FY 1998 - 2007	FY 1998 - 2011
Total Procurement Quantity	48	48
LRIP Percentage of Total	29.2%	29.2%

**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 due to this being a shipbuilding program for which this is standard practice.

**LRIP Notes**

None

**(U) Deliveries and Expenditures**

**(U) Acquisition Funding**

	Total Estimate	Actual to Date	Actual, Percent Complete
Years Appropriated	48	33	68.8%
Appropriations (TY, \$M)	192,086.4	-	-
Expenditures (TY, \$M)	192,086.4	99,179.7	51.6%

**(U) End Items Delivered**

	Total Required	Planned to Date	Actual to Date	Actual, Percent Complete
Procurement	51			
SSN 774		28	22	
<b>Total</b>	<b>51</b>	<b>28</b>	<b>22</b>	<b>43.1%</b>

**Notes**

None

## (U) International Program Aspects

### General Memo

The FY2024 National Defense Authorization Act authorized the sale of up to three VIRGINIA Class submarines to Australia in furtherance of the AUKUS partnership, with sales expected to begin in the early 2030s. Future reports will expand upon the details of this agreement as available.

### Exportability and Business Issues

TBD

Is design for international exportability planned?	No	Industry/Partner Exportability Cost-Sharing?	No
If not, has the MDA approved an exportability waiver for a U.S.-only design?	Not Applicable		

### Program Protection: Technology Security and Foreign Disclosure Issues

TBD

### (U) Agreements

No International Agreements have been defined for SSN 774



UNCLASSIFIED

**Modernized  
Selected Acquisition Report  
Supplement**

**SSN 774 Virginia Class Submarine  
(SSN 774)**

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**

SSN 774 Virginia Class Submarine

**Short Name**

SSN 774

**PNO**

516

**Lead Component**

Navy

**AAF Pathway**

MCA

**Acquisition Type**

MDAP

**Acquired Systems**

SSN 774 Q1 FY21

**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 Capabilities Acquisition Pathway.

## Technologies and Systems Engineering

### SSN 774 Virginia Class Submarine

#### Major Software Efforts

Title	Status	Fielding Date	Description
None			

#### Major Engineering Changes

Title	Original Need Date	Fielding Date	Description, Rationale and Program Impacts
None			



**Funding Sources (Acquisition)**

Category	Account	BA	Line Item	Program Element	RDT&E Project	Shared	Sunk
Procurement	1611N	02	2013 - Virginia Class Submarine	0204281N	-		
Procurement	1611N	05	5300 - Completion of PY Shipbuilding Programs	0204281N	-	x	
Procurement	1611N	05	5110 - Outfitting	0204281N	-	x	
Procurement	1810N	01	0942 - Virginia Class Support Equipment	0204281N	-		
Procurement	1810N	01	0941 - Submarine Support Equipment	0204281N	-	x	
Procurement	1810N	08	9020 - Spares and Repair Parts	0204281N	-	x	x
MILCON	1205N	01	61755677 - Operational Storage and Maintenance Fac Block	0712976N	-		
MILCON	1205N	01	001291044 - Submarine Pier 31 Extension	0212176N	-		
MILCON	1205N	01	62688095 - Submarine Pier 3 (INC)	0203176N	-		
MILCON	1205N	01	61755676 - PDI: Polaris Point Submarine Pier (Inc)	0203176N	-		
MILCON	1205N	01	62688702 - Submarine Logistics Support Facilities	0712876N	-		
MILCON	1205N	01	628132005 - Submarine Storage, Maintenance & Outfitting F	0712776N	-		
MILCON	1205N	01	628132005 - Submarine Storage, Maintenance & Outfitting F	0712876N	-		
MILCON	1205N	01	001291045 - SUBMARINE STORAGE, MAINTENANCE & OPS FAC	0712876N	-		
RDT&E	1319N	XX	OTHER - Other or New 1319N Line Item	XXX	XXX - --		x
Note: BA 03; PE 0603561N - New Design SSN HM&E (NSSN Unique); Project F2177 - New Design SSN HM&E							
RDT&E	1319N	05	0604558N - New Design SSN	0604558N	F1947 - New Design Ssn Hm&E		
RDT&E	1319N	05	0604558N - New Design SSN	0604558N	F1950 - New Design Ssn Combat Sys Dev		

Category	Account	BA	Line Item	Program Element	RDT&E Project	Shared	Sunk
RDT&E	1319N	05	0604558N - New Design SSN	0604558N	9999 - Congressional Add		
RDT&E	1319N	04	0603570N - Advanced Nuclear Power Systems	0603570N	2158 - S9G Nuclear Propulsion Plant		x
RDT&E	1319N	XX	OTHER - Other or New 1319N Line Item	XXX	XXX - --		x
Note: BA 05; PE 0604558N - New Design HM&E and Combat Systems Congressional Add; Project C462 - New Design HM&E and Combat Systems Congressional Add							
RDT&E	1319N	05	0604580N - Virginia Payload Module (VPM)	0604580N	4500 - VIRGINIA Payload Module		x
RDT&E	1319N	05	0604558N - New Design SSN	0604558N	F2644 - Nssn Advanced Technology Insertion		x
RDT&E	1319N	05	0604558N - New Design SSN	0604558N	F2645 - Non-Propulsion Electronics System		x
RDT&E	1319N	05	0604558N - New Design SSN	0604558N	F2887 - Virginia Class Ssn Combat Sys Tec Insertion/R		x
RDT&E	1319N	05	0604558N - New Design SSN	0604558N	9231 - Shipmates for Virginia Class		x
RDT&E	1319N	05	0604558N - New Design SSN	0604558N	9232 - COTS Combat Control Framework		x
RDT&E	1319N	05	0604558N - New Design SSN	0604558N	9386 - VA Class SSN Dev - SBIR Phase III Research		x
RDT&E	1319N	05	0604558N - New Design SSN	0604558N	9387 - Virginia Class SSN Development		x
RDT&E	1319N	05	0604558N - New Design SSN	0604558N	4500 - VIRGINIA Payload Module		x
RDT&E	1319N	XX	OTHER - Other or New 1319N Line Item	XXX	XXX - --		x
Note: BA 03; PE 0603564N - Ship Preliminary Design; Project F2200 - Ship Preliminary Design							
RDT&E	1319N	XX	OTHER - Other or New 1319N Line Item	XXX	XXX - --		x
Note: BA 05; PE 0604558N - New Design HM&E and Combat Systems (Enhanced Sonar Dome Demo); Project F2429 - New Design HM&E and Combat Systems (Enhanced Sonar Dome Demo)							
RDT&E	1319N	XX	OTHER - Other or New 1319N Line Item	XXX	XXX - --		x
Note: BA 05; PE 0604558N - New Design HM&E and Combat Systems (Adv Sub Tactical Electronics Sys); Project F2430 - New Design HM&E and Combat Systems (Adv Sub Tactical Electronics Sys)							
RDT&E	1319N	XX	OTHER - Other or New 1319N Line Item	XXX	XXX - --		x

Category	Account	BA	Line Item	Program Element	RDT&E Project	Shared	Sunk
Note: BA 05; PE 0604558N - New Design HM&E and Combat Systems; Project F2888 - New Design HM&E and Combat Systems							
RDT&E	1319N	05	0604558N - New Design SSN	0604558N	3062 - Submarine Multi-Mission Team Trainer	x	x
RDT&E	1319N	XX	OTHER - Other or New 1319N Line Item	XXX	XXX - --		x
Note: BA 04; PE 0604567N - Ship Contract Design; Project F2199 - Ship Contract Design							
RDT&E	1319N	XX	OTHER - Other or New 1319N Line Item	XXX	XXX - --		x
Note: BA 05; PE 0604558N - New Design HM&E and Combat Systems Congressional Add; Project C229 - New Design HM&E and Combat Systems Congressional Add							

## Funding Sources (Operating and Support)

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

### Operating and Support Funding Notes

None

### SSN 774 Virginia Class Submarine

Category	Account	BA	Line Item	Program Element	RDT&E Project	Shared	Sunk
Procurement	1810N	08	9021 - VIRGINIA Class (VA CL) Spares and Repair parts	0204281N	-		
Procurement	1810N	01	0670 - Other Navigation Equipment	0204281N	-		
Procurement	1810N	01	0840 - Sub Periscope, Imaging and Supt Equip Prog	0204281N	-		
Procurement	1810N	01	0941 - Submarine Support Equipment	0204281N	-		
Procurement	1810N	02	2150 - SSN Acoustic Equipment	0204281N	-		
Procurement	1810N	02	2210 - Submarine Acoustic Warfare System	0204281N	-		
Procurement	1810N	02	2940 - GPETE	0204281N	-		
Procurement	1810N	02	3130 - Submarine Communication Equipment	0204281N	-		
Procurement	1810N	08	9020 - Spares and Repair Parts	0204281N	-		
Procurement	1810N	08	9020 - Spares and Repair Parts	0204283N	-		
Procurement	1810N	04	5420 - SSN Combat Control Systems	0204284N	-		
Procurement	1810N	08	9020 - Spares and Repair Parts	0204284N	-		
Procurement	1810N	01	0945 - Submarine Batteries	0204561N	-		
O&M	1804N	01	1B1B - Mission and Other Ship Operations	0204281N	-		

**SSN 774 Virginia Class Submarine**

Category	Account	BA	Line Item	Program Element	RDT&E Project	Shared	Sunk
O&M	1804N	01	1B2B - Ship Operations Support & Training	0204281N	-		
O&M	1804N	01	1B4B - Ship Depot Maintenance	0204281N	-		
O&M	1804N	01	1D4D - Weapons Maintenance	0204281N	-		
O&M	1804N	01	1B2B - Ship Operations Support & Training	0204283N	-		
O&M	1804N	01	1B5B - Ship Depot Operations Support	0204283N	-		
O&M	1804N	01	1B1B - Mission and Other Ship Operations	0204561N	-		
O&M	1804N	01	1B2B - Ship Operations Support & Training	0204561N	-		

**Acquisition Estimate and Quantity Summary****SSN 774 Virginia Class Submarine****Acquisition Estimates**

Category	PB 2025	TY (\$M)	Current Base Year	Original Base Year	Report Fiscal Year
			CY1995 (\$M)	CY1995 (\$M)	CY2024 (\$M)
RDT&E		9,615.1	7,178.7	7,178.7	12,858.1
Procurement		181,477.5	93,657.0	93,657.0	167,753.9
MILCON		993.8	498.3	498.3	892.5
O&M		-	-	-	-
<b>Total Acquisition</b>		<b>192,086.4</b>	<b>101,334.0</b>	<b>101,334.0</b>	<b>181,504.5</b>
PAUC		3,766.4	1,986.9	1,986.9	3,558.9
APUC		3,558.4	1,836.4	1,836.4	3,289.3

**Acquisition End-Item Quantities**

System	PB 2025	Development	Procurement
SSN 774 Q1 FY21		-	51
<b>Total</b>		<b>-</b>	<b>51</b>

**Unit Description**

VIRGINIA Class Submarine

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

Appropriation	Prior	2024	2025	2026	2027	2028	2029	To Complete	Total
RDT&E	7,523.8	232.9	265.4	258.5	253.7	260.5	265.8	554.6	9,615.1
Procurement	114,383.7	10,562.2	7,731.6	9,601.9	9,385.2	8,684.4	9,717.2	11,411.3	181,477.5
MILCON	263.1	211.6	-	30.8	-	129.0	359.3	-	993.8
O&M	-	-	-	-	-	-	-	-	-
<b>PB 2025 Total</b>	<b>122,170.6</b>	<b>11,006.7</b>	<b>7,997.0</b>	<b>9,891.2</b>	<b>9,639.0</b>	<b>9,073.8</b>	<b>10,342.3</b>	<b>11,965.9</b>	<b>192,086.4</b>

## Annual Acquisition Estimates by Appropriation Account

(Aligned to Budget Position: PB 2025)

### SSN 774 Virginia 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 CY1995 (\$M)
<b>Total</b>	<b>177,957.5</b>	<b>-</b>	<b>1,932.3</b>	<b>1,093.5</b>	<b>-</b>	<b>-</b>	<b>180,983.3</b>	<b>-</b>	<b>93,327.7</b>
1992							0.0	0.985286	-
1993							0.0	0.995234	-
1994							0.0	1.019190	-
1995							0.0	1.030639	-
1996	571.0		219.3				790.3	1.041716	758.6
1997	532.9		242.5				775.4	1.057630	733.2
1998	1625.0		840.9				2465.9	1.081431	2,280.2
1999	1881.6		165.6				2047.2	1.098633	1,863.4
2000	743.7		0.0	0.0			743.7	1.126548	660.2
2001	1589.8		90.8	0.2			1680.8	1.165298	1,442.4
2002	2407.4		60.8	15.9			2484.1	1.171932	2,119.7
2003	2402.0		14.3	8.3			2424.6	1.239734	1,955.8
2004	2715.2		6.9	11.0			2733.1	1.284707	2,127.4
2005	2601.5		0.0	4.3			2605.8	1.341651	1,942.3
2006	2563.8		0.0	15.1			2578.9	1.388967	1,856.7
2007	2580.8		0.0	8.4			2589.2	1.452791	1,782.3
2008	3157.6		0.0	19.5			3177.1	1.502273	2,114.9
2009	3646.6		0.0	17.9			3664.5	1.548230	2,366.9
2010	4034.7		0.0	9.8			4044.5	1.602020	2,524.6
2011	5160.3		0.0	18.7			5179.0	1.654575	3,130.1
2012	4734.4		0.0	12.3			4746.7	1.692531	2,804.5
2013	4686.1		0.0	16.9			4703.0	1.727931	2,721.7
2014	6523.4		0.0	26.2			6549.6	1.762920	3,715.2
2015	5913.0		0.0	24.6			5937.6	1.803552	3,292.1
2016	5388.3		0.0	34.7			5423.0	1.849672	2,931.9
2017	5021.9		93.7	22.4			5138.0	1.902731	2,700.3
2018	5407.8		90.5	14.5			5512.8	1.964711	2,805.9
2019	7100.8		107.0	34.8			7242.6	2.037815	3,554.1
2020	8453.3			22.9			8476.2	2.121786	3,994.8
2021	6876.6			39.8			6916.4	2.207573	3,133.0
2022	6403.4			20.7			6424.1	2.284657	2,811.8
2023	6954.5			10.0			6964.4	2.338418	2,978.3
2024	10538.7			13.6			10552.3	2.388583	4,417.8
2025	7707.0			14.5			7721.5	2.438832	3,166.1
2026	9578.3			13.2			9591.6	2.490048	3,852.0
2027	9330.5			44.2			9374.7	2.542339	3,687.4
2028	8628.6			45.0			8673.6	2.595728	3,341.5

**SSN 774 Virginia Class Submarine**

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

<b>1611N (BLS Hist) - Shipbuilding and Conversion, Navy</b>									
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 CY1995 (\$M)
2029	9660.2			46.0			9706.3	2.650238	3,662.4
2030	5035.4			65.8			5101.2	2.705893	1,885.2
2031	4677.8			49.0			4726.9	2.762717	1,710.9
2032	167.0			57.5			224.6	2.820734	79.6
2033	69.5			64.1			133.6	2.879969	46.4
2034	144.3			65.4			209.7	2.940449	71.3
2035	152.8			65.4			218.2	3.002198	72.7
2036	152.8			65.4			218.2	3.065244	71.2
2037	152.1			51.0			203.1	3.129614	64.9
2038	150.5			21.3			171.8	3.195336	53.8
2039	134.6			2.9			137.5	3.262438	42.2



## Annual Acquisition Estimates by Appropriation Account

(Aligned to Budget Position: PB 2025)

### SSN 774 Virginia 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 CY1995 (\$M)
<b>Total</b>		<b>9,615.1</b>	<b>9,615.1</b>	<b>-</b>	<b>7,178.7</b>
1992		22.7	22.7	0.953632	23.8
1993		66.3	66.3	0.975693	68.0
1994		363.7	363.7	0.993978	365.9
1995		453.4	453.4	1.013133	447.5
1996		429.0	429.0	1.030246	416.4
1997		452.3	452.3	1.042880	433.7
1998		382.4	382.4	1.051422	363.7
1999		308.4	308.4	1.063801	289.9
2000		275.4	275.4	1.079372	255.1
2001		237.3	237.3	1.094181	216.9
2002		218.8	218.8	1.105241	198.0
2003		242.2	242.2	1.121443	216.0
2004		155.4	155.4	1.152748	134.8
2005		153.1	153.1	1.183088	129.4
2006		166.3	166.3	1.219952	136.3
2007		191.2	191.2	1.249833	153.0
2008		233.5	233.5	1.272631	183.5
2009		180.5	180.5	1.288972	140.0
2010		172.8	172.8	1.308306	132.1
2011		161.5	161.5	1.339545	120.6
2012		105.7	105.7	1.361761	77.6
2013		78.7	78.7	1.376060	57.2
2014		115.4	115.4	1.395504	82.7
2015		189.6	189.6	1.413063	134.2
2016		305.1	305.1	1.439289	212.0
2017		220.3	220.3	1.466219	150.3
2018		177.3	177.3	1.502133	118.0
2019		171.8	171.8	1.531064	112.2
2020		306.2	306.2	1.587367	192.9
2021		230.7	230.7	1.658710	139.1
2022		461.0	461.0	1.745365	264.1
2023		295.8	295.8	1.797325	164.6
2024		232.9	232.9	1.838354	126.7
2025		265.4	265.4	1.877351	141.4
2026		258.5	258.5	1.916775	134.9
2027		253.7	253.7	1.957028	129.7
2028		260.5	260.5	1.998125	130.4

**SSN 774 Virginia Class Submarine**

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

<b>1319N - Research, Development, Test &amp; Eval, Navy</b>					
<b>fiscal year</b>		<b>Other/ Unallocated</b>	<b>Total TY(\$M)</b>	<b>Weighted Rate</b>	<b>Total CY1995 (\$M)</b>
2029		265.8	265.8	2.040086	130.3
2030		133.5	133.5	2.082928	64.1
2031		132.9	132.9	2.126669	62.5
2032		125.4	125.4	2.171329	57.8
2033		112.2	112.2	2.216927	50.6
2034		8.2	8.2	2.263482	3.6
2035		8.5	8.5	2.311016	3.7
2036		8.1	8.1	2.359547	3.4
2037		8.3	8.3	2.409097	3.4
2038		8.6	8.6	2.459688	3.5
2039		8.9	8.9	2.511342	3.5

## Annual Acquisition Estimates by Appropriation Account

(Aligned to Budget Position: PB 2025)

### SSN 774 Virginia 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 CY1995 (\$M)
<b>Total</b>		<b>993.8</b>	<b>993.8</b>	<b>-</b>	<b>498.3</b>
1992			-	0.972045	-
1993			-	0.991339	-
1994			-	1.015048	-
1995			-	1.031888	-
1996			-	1.045652	-
1997			-	1.052128	-
1998			-	1.061688	-
1999			-	1.078497	-
2000			-	1.092411	-
2001			-	1.104764	-
2002			-	1.120517	-
2003			-	1.145456	-
2004			-	1.175450	-
2005			-	1.208811	-
2006			-	1.241598	-
2007			-	1.266848	-
2008			-	1.288438	-
2009			-	1.306092	-
2010			-	1.338780	-
2011			-	1.368852	-
2012			-	1.389077	-
2013			-	1.408865	-
2014			-	1.429996	-
2015			-	1.470301	-
2016			-	1.504568	-
2017			-	1.543322	-
2018			-	1.600597	-
2019			-	1.662170	-
2020			-	1.732358	-
2021			-	1.792558	-
2022		88.9	88.9	1.832873	48.5
2023		174.2	174.2	1.875448	92.9
2024		211.6	211.6	1.915630	110.5
2025		0.0	-	1.955961	-
2026		30.8	30.8	1.997036	15.4
2027		0.0	-	2.038974	-
2028		129.0	129.0	2.081792	62.0

**SSN 774 Virginia Class Submarine**

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

<b>1205N - Military Construction, Navy</b>					
<b>fiscal year</b>		<b>Other/ Unallocated</b>	<b>Total TY(\$M)</b>	<b>Weighted Rate</b>	<b>Total CY1995 (\$M)</b>
2029		359.3	359.3	2.125510	169.0

## Annual Acquisition Estimates by Appropriation Account

(Aligned to Budget Position: PB 2025)

### SSN 774 Virginia 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 CY1995 (\$M)
<b>Total</b>	-	-	-	-	-	<b>494.2</b>	<b>494.2</b>	-	<b>329.3</b>
1992							-	0.981034	-
1993							-	0.992222	-
1994							-	1.006260	-
1995							-	1.023683	-
1996							-	1.036563	-
1997							-	1.048402	-
1998							-	1.057298	-
1999							-	1.070626	-
2000							-	1.085510	-
2001							-	1.100052	-
2002							-	1.114717	-
2003							-	1.136756	-
2004							-	1.164802	-
2005						12.5	12.5	1.197596	10.4
2006						44.1	44.1	1.237279	35.6
2007						47.0	47.0	1.264212	37.2
2008						39.7	39.7	1.284757	30.9
2009						48.0	48.0	1.301693	36.9
2010						13.8	13.8	1.326852	10.4
2011						21.7	21.7	1.346253	16.1
2012						5.3	5.3	1.367673	3.9
2013						1.8	1.8	1.386401	1.3
2014						14.7	14.7	1.404851	10.5
2015						9.3	9.3	1.425110	6.5
2016						2.0	2.0	1.450909	1.4
2017						9.0	9.0	1.481726	6.1
2018						24.3	24.3	1.515493	16.0
2019						27.2	27.2	1.552269	17.5
2020						16.1	16.1	1.606927	10.0
2021						9.3	9.3	1.685540	5.5
2022						9.5	9.5	1.757026	5.4
2023						9.7	9.7	1.807891	5.4
2024						9.9	9.9	1.848871	5.4
2025						10.1	10.1	1.888078	5.4
2026						10.3	10.3	1.927728	5.3
2027						10.5	10.5	1.968210	5.3
2028						10.7	10.7	2.009543	5.3

**SSN 774 Virginia Class Submarine**

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

<b>1810N - Other Procurement, Navy</b>									
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 CY1995 (\$M)
2029						10.9	10.9	2.051743	5.3
2030						12.5	12.5	2.094830	6.0
2031						12.8	12.8	2.138821	6.0
2032						13.2	13.2	2.183736	6.0
2033						13.6	13.6	2.229595	6.1
2034						2.7	2.7	2.276416	1.2
2035						2.8	2.8	2.324221	1.2
2036						2.9	2.9	2.373030	1.2
2037						3.0	3.0	2.422863	1.2
2038						3.1	3.1	2.473743	1.3

## Acquired System Annual End-Item Quantities by Appropriation Account

(Aligned to Budget Position: PB 2025)

### SSN 774 Virginia Class Submarine

1611N (OSD Compt) - Shipbuilding and Conversion, Navy				
fiscal year	SSN 774 Q1 FY21			Total
<b>Total</b>	<b>51</b>			<b>51</b>
1998	1			1
1999	1			1
2000				-
2001	1			1
2002	1			1
2003	1			1
2004	1			1
2005	1			1
2006	1			1
2007	1			1
2008	1			1
2009	1			1
2010	1			1
2011	2			2
2012	2			2
2013	2			2
2014	2			2
2015	2			2
2016	2			2
2017	2			2
2018	2			2
2019	2			2
2020	2			2
2021	2			2
2022	2			2
2023	2			2
2024	2			2
2025	1			1
2026	2			2
2027	2			2
2028	2			2
2029	2			2
2030	1			1
2031	1			1

## **Nuclear Costs**

### **SSN 774 Virginia Class Submarine**

*Some data for this section cannot be provided in an unclassified report*

### **Program's Use of Department of Energy Resources**



## Operational Fielding Plan

### SSN 774 Virginia Class Submarine

**System: SSN 774 Q1 FY21**

#### Fielding and Inventory Notes

None

#### SSN 774 Q1 FY21 Fielding Plan and Inventory

fiscal year	Store	Field	Expend/Loss	Decommission	Inventory
2023					22
2024		2			24
2025		3			27
2026		2			29
2027		1			30
2028		-			30
2029		3			33

## O&S Independent Cost Estimate

### SSN 774 Virginia Class Submarine

#### Independent and Current Cost Estimate Comparison

Category	CY1995 (\$M)	Independent Cost Estimate 11/4/2016	Current Estimate 11/4/2016	Variance with ICE (%)
Unit-Level Manpower		10,996.2	10,996.2	0%
Unit Operations		1,344.8	1,344.8	0%
Maintenance		33,139.1	33,139.1	0%
Sustaining Support		777.7	777.7	0%
Continued System Improvements		11,645.6	11,645.6	0%
Other		-	-	-
<b>Total O&amp;S</b>		<b>57,903.4</b>	<b>57,903.4</b>	<b>0%</b>

#### Independent Cost Estimate Source

Event: 2017 APB Update  
 Type: Component Cost Position  
 Approved by: ASN (FMC), November 4, 2016  
 Note: The Navy is updating the O&S estimates which will be included in an APB update.

#### Current Cost Estimate Source

Type: Component Cost Estimate  
 Approved by: OSD Cost Assessment & Program Evaluation, November 4, 2016  
 Note: Annual Estimates not available.

#### Cost Estimate Variance Explanation

The O&S cost position remains consistent with the effort for the VIRGINIA Class APB (signed out in January 2017). An APB update is in progress.

# Annual Operating and Support Estimates by Cost Element

## SSN 774 Virginia Class Submarine

### System: SSN 774 Q1 FY21

Source for TY-CY Conversion:

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 CY1995 (\$M)
<b>Total</b>	-	-	-	-	-	-	-