Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy											Date: March 2023	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603563N *I Ship Concept Advanced Design*							
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
Total Program Element	435.621	132.244	130.405	89.939	-	89.939	87.041	83.795	97.314	89.856	Continuing	Continuing
2196: *Design, Tools, Plans and Concepts*	24.613	15.256	17.369	15.345	-	15.345	21.788	24.039	27.657	33.172	Continuing	Continuing
3161: *NAVSEA Tech Authority*	282.574	13.612	11.569	11.466	-	11.466	8.639	8.701	8.784	8.929	Continuing	Continuing
3244: *Cybersecurity Engineering*	15.468	14.914	15.509	36.117	-	36.117	37.628	38.138	38.648	39.160	Continuing	Continuing
3376: *Strategic Sealift*	29.545	8.759	7.166	6.134	-	6.134	4.696	4.201	4.268	4.255	Continuing	Continuing
3505: *Maritime Prepositioning Force Next*	0.000	0.000	0.000	1.502	-	1.502	1.503	2.539	16.485	2.485	Continuing	Continuing
4044: *Medium Landing Ship*	20.030	12.667	12.167	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	44.864
4045: *Next Generation Medium Logistics Ship*	19.978	20.384	2.959	8.810	-	8.810	7.737	2.149	1.472	1.855	Continuing	Continuing
5010: *AS(X) Submarine Tender*	0.000	15.781	15.466	10.565	-	10.565	5.050	4.028	0.000	0.000	0.000	50.890
9999: *Congressional Adds*	43.413	30.871	48.200	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	122.484

A. Mission Description and Budget Item Justification

Project 2196 - This project provides the analytical foundation for making informed force structure, capability and affordability decisions in the development of all future surface ship platforms, weapons, sensors and combat systems. It realizes this through total ship system engineering, technology integration, cost estimation, mission effectiveness analysis, force architecture synthesis, and force-level effectiveness analysis, as well as continuous development of the people, tools and processes required to accomplish these efforts efficiently. This includes early-stage concept development studies for all potential future surface ships. It also includes quantitative mission and force-level analysis to identify future capability gaps and requirements related to advances in threat capabilities, and evaluation of the effectiveness and affordability of potential future technology and concept of operations (CONOP) solutions. Results from this project are used to inform senior Navy leadership in support of budgetary decisions, Capability Evolution Plans (CEP), and requirements related to surface ship force structure, platforms and major combat system elements.

Project 3161 - This project is the only R&D effort that provides a coordinated approach to the development of cross platform ship and weapon system designs and technologies "common" to multiple ships and systems. This project directly influences technical standards for design, construction, certification and operation and provides an avenue for innovative solutions and technologies to compete with legacy product requirements and specifications. This project conducts risk reduction of alternative technical architectures, designs and technology solutions that meet Fleet operational and technical requirements at lower cost; and develops engineering capabilities in the areas of design tools, criteria and methods. This project funds a prioritized portfolio of time-sensitive initiatives through the Cross Platform Systems Development (CPSD) Program, supporting NAVSEA Technical Authority and associated risk reduction activity. The areas of exploration for the CPSD Program include Ship Technology Improvements, Fleet Maintenance and Life Cycle Cost Reduction, Advanced Manufacturing and Material Technology, Additive Manufacturing, Digital

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy	Date: March 2023
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*

Framework/Electromagnetic Environment and Development and Unmanned Systems. The research products developed by this project directly support and influence both current Fleet requirements and future acquisition programs by providing a range of technically acceptable alternatives and evaluation of emerging technologies. The prototypes, standards/specs, tools and processes and other products developed in this project focus on technical requirements and technologies applicable to multiple ship classes or systems. Products from this project transition directly to early-stage ship design for Ship Preliminary Design and Feasibility Studies, Program Executive Office (PEO) ship acquisition programs, and Systems Engineering Technical Authority (SETA) requirements documentation. Tasks within this project include R&D efforts focused on increasing sustainment technologies and improving performance at reduced cost for current and future naval platforms. This Project supports the Navy National Shipbuilding Research Program (NSRP).

Project 3505 - The MPF(X) ships will recapitalize the aging BOBO Class maritime prepositioning ships. The 'Sealift the Nation Needs' report to Congress defines a three-phase Sealift Recapitalization approach: Service Life Extensions, Acquiring Used ships, and new construction. The MPF(X) portion represents the prepositioning new construction aspect of the three-phase sealift recapitalization approach. USNS BOBO class ships will retire from service beginning in FY 2033. Conduct of an Analysis of Alternatives (AoA) and draft of a Capabilities Development Document (CDD) are planned beginning in FY 2024.

Project 3244 - This effort funds the research, design, development, testing, and installation of Cybersecurity solutions for all installed integrated computer networks to include shipboard Hull Mechanical and Electrical (HM&E), Navigation Systems, Combat Systems, Fire Control, Sonar, Radar, Communications and all other shipboard computerized control systems for all afloat U.S. Navy platforms. Cybersecurity Engineering supports the development of specifications and standards for the Cybersecurity of all Navy Control Systems (NCS).

Project 3376 - Strategic Sealift Research and Development - Develops new concepts and technologies which can be applied to or will enable future strategic sealift, and Seabasing systems. The technologies include ship configuration concepts, equipment to increase cargo handling and cargo loading/unloading rates (including commercial and merchant ship systems), improved man/machine interfaces, improved structural configurations and materials, and Logistics-Over-the-Shore (LOTS) equipment and system improvements. FY2016 and prior years (FY2014 and earlier) efforts were financed under the National Defense Sealift Fund (NDSF) BA 04 Project 3116 Strategic Sealift Research and Development. FY 2015, FY 2017, and FY 2019 and future efforts are financed under this program element and project (3376).

Project 4044 - The Light Amphibious Warship (LAW) will be referred to as the Medium Landing Ship (LSM) going forward to align with the mission and distinguish between traditional amphibious ships. LSM is a medium-sized landing ship that enables distributed maneuver and logistics such as Distributed Maritime Operations (DMO), Littoral Operations in a Contested Environment (LOCE), and Expeditionary Advanced Base Operations (EABO) in support of the newly established Marine Littoral Regiment (MLR). It is designed to fill the gap in capability between the Navy's large, multipurpose amphibious warfare class ships and smaller landing vessels. This ship will deploy tailored logistics, select power projection and strike capabilities. Beginning in FY 2024, LSM is shown under PE 0603564N, Ship Preliminary Design and Feasibility Studies, to better align with the scope of work of the program.

Project 4045 - The Next Generation Logistics Ship (NGLS) is planned to be a new class of ships to augment the traditional Combat Logistics Force (CLF) to enable refueling, rearming, and resupply of Naval assets - afloat and ashore - near contested environments via ship-to-ship operations and ship-to port operations in support of Distributed Maritime Operations (DMO), Littoral Operations Contested Environment (LOCE), and Expeditionary Advanced Base Operations (EABO). Augmenting

the traditional CLF, NGLS will provide a flexible, responsive platform to move fuel, personnel, equipment, and supplies between ships, advanced bases, ports, and dispersed nodes of the sea base; sustaining afloat (Surface Action Group) and ashore (Expeditionary Advanced Base) requirements. RDT&E funding will continue to support development of the NGLS ship design(s), specification development, affordability analyses, and definition of ship mission systems leading to Detail Design & Construction award of the lead ship in FY 2026.

Project 5010 - This project supports Submarine Tender Recapitalization Acquisition Documentation development, Preliminary Design, Detail Design, Program Management/Engineering Services and Total Ship Integration. The Submarine Tender approach leverages current Submarine Tender capabilities, Nuclear Support Facility, integrating new VACL and CLB capabilities into the requirements generation and shipbuilding contracts. Identified missions include Submarine Tending, Re-arming, re-supply of material, medical/dental, Nuclear Support, Submarine Systems repair and other maintenance support. Funding will inform requirements definition, early industry engagement preliminary designs, trade studies, and follow-on assessment for Sub Tender.

Project 9999 (Congressional Add)- Funding provided in the Department of Defense Appropriations Act, 2023 for defense industrial skills and technology training systems, marine energy systems for sensors and microgrids, digital maintenance advisor for shipboard readiness, metallic additive manufacturing, and critical protection technology for cybersecurity engineering.

B. Program Change Summary ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	136.074	82.205	108.811	-	108.811
Current President's Budget	132.244	130.405	89.939	-	89.939
Total Adjustments	-3.830	48.200	-18.872	-	-18.872
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	48.200			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.830	0.000			
• Program Adjustments	0.000	0.000	-20.185	-	-20.185
• Rate/Misc Adjustments	0.000	0.000	1.313	-	1.313

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Project: 9999: *Congressional Adds*		
Congressional Add: *Marine energy systems for sensors and microgrids*	0.000	15.000
Congressional Add: *High pressure cold spray system*	9.647	0.000
Congressional Add: *Defense industrial Skills and Technology Training*	0.000	10.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy	Date: March 2023
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603563N *I Ship Concept Advanced Design*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Congressional Add: *Polymorphic Build Farm for Open Source Technologies*	9.647	0.000
Congressional Add: *Metallic additive manufacturing*	4.824	4.000
Congressional Add: *Critical protection technology for cybersecurity engineering*	6.753	11.700
Congressional Add: *Digital maintenance advisor for shipboard readiness*	0.000	7.500
Congressional Add Subtotals for Project: 9999	30.871	48.200
Congressional Add Totals for all Projects	30.871	48.200

Change Summary Explanation

Program adjustments include:

Project 2196 Design, Tools, Plans, and Concepts: Funds added in support of the Collaborative Enduring Concepts and Tools (COLLECT) effort.

Project 3376 Strategic Sealift: Funds decreased for proper phasing to support preliminary design contracts.

Project 4044 Light Amphibious Warship: Funds decreased due to realignment of effort to PE 0603564N, Ship Preliminary Design & Feasibility Studies, to better align with the scope of work of the program.

Project 4045 Next Generation Medium Logistics Ship: Funds increased in support of Preliminary Design and engineering efforts in support of the lead ship.

Project 5010 AS(X) Submarine Tender: Funds decreased in RDT&E in preparation of planned AS(X) Detail, Design, and Construction (DD&C) contract award.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603563N / *Ship Concept Advanced Design*	Project (Number/Name) 2196 / *Design, Tools, Plans and Concepts*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
2196: *Design, Tools, Plans and Concepts*	24.613	15.256	17.369	15.345	-	15.345	21.788	24.039	27.657	33.172	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project 2196 - This project provides the analytical foundation for making informed force structure, capability and affordability decisions in the development of all future surface ship platforms, weapons, sensors and combat systems. It realizes this through total ship system engineering, technology integration, cost estimation, mission effectiveness analysis, force architecture synthesis, and force-level effectiveness analysis, as well as continuous development of the people, tools and processes required to accomplish these efforts efficiently. This includes early-stage concept development studies for all potential future surface ships. It also includes quantitative mission and force-level analysis to identify future capability gaps and requirements related to advances in threat capabilities, and evaluation of the effectiveness and affordability of potential future technology and concept of operations (CONOP) solutions. Results from this project are used to inform senior Navy leadership in support of budgetary decisions, Capability Evolution Plans (CEP), and requirements related to surface ship force structure, platforms and major combat system elements.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Future Surface Combatant Force (FSCF) Analysis	9.485	8.216	6.680	0.000	6.680
Articles:	-	-	-	-	-
Description: Description: FSCF analysis focuses on the long time-horizon, approximately 20-25 years in the future, to understand necessary changes in the surface combatant force's structure and capabilities and informs near-term decisions and planning that drive these changes. FSCF Analysis provides warfighting effectiveness and cost analysis of force structure and concept of operations/employment (CONOP/CONEMP) alternatives, ship and combat system requirements, and key technology enablers for the FSCF to address future threats. It generates insights supporting budgetary decisions by senior Navy leadership and assists in establishing Capability Evolution Plans (CEP), as well as long-term future requirements for all future surface combatant ships and major combat system elements.					
FY 2023 Plans: Re-baseline analysis to capture key acquisition, technology, CONOPs and threat developments.					
FY 2024 Base Plans: Excursion Analysis, including evaluation of FY 2023 results' sensitivity to key assumptions and exploration of additional cost, capability and CONOP tradeoffs.					
FY 2024 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 2196 / *Design, Tools, Plans and Concepts*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Reduction in FY 2023 to FY 2024 request due to reduction in work scope and transfer of activities into Ship Design Tool and Workforce Development task activity (3) and continued analytic efficiencies realized through work product re-use and workforce learning.					
Title: Naval Capability Integration Process (NCIP) - From the Sea (FTS) ***Articles:*** ***Description:*** NCIP is an annual process analyzing current, programmed, and non-programmed near-term capability alternatives relative to stressing threats in the short time-horizon, which is approximately 10 years in the future. NCIP-FTS focuses on surface combatant contributions to integrated effects chains, especially for Naval Surface Fires and Integrated Air and Missile Defense, which is aligned with NCIP From the Air (FTA), Information Warfare (IW), Anti-Submarine Warfare (ASW), and Marine Corp efforts. NCIP evaluates platform, weapon, sensor and combat system capabilities to address warfighting requirements and gaps. Additionally, it supports investment decisions that focus resources where they will have the greatest warfighting impact. ***FY 2023 Plans:*** Execute NCIP-FTS process and provide analytical insights to support surface combatant related investment decisions. ***FY 2024 Base Plans:*** Conduct mission and force-level effectiveness analysis via the annual NCIP-FTS process. Evaluate the ability of current, programmed and non-programmed near-term capabilities to address capability requirements and gaps within integrated effects chains relative to future stressing threats. Execute NCIP-FTS systems of systems analysis against the projected threat and provide quantitative analytical data to support Navy Leadership Program Objective Memorandum warfighting capability decisions. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease in the funding request from FY 2023 to FY 2024 to reflect proper phasing of funding in support of the NCIP effort.	4.271 -	4.414 -	3.665 -	0.000 -	3.665 -
Title: Ship Design Tool and Workforce Development	1.500	1.939	5.000	0.000	5.000

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 2196 / *Design, Tools, Plans and Concepts*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Articles:	-	-	-	-	-
Description: Develop and maintain the ship design workforce and tools that are critical enablers for affordable and effective maturation of new surface ship programs through continuous concept development and engineering analysis. Tool development focus areas include general rapid ship design and integration and domain specific tools such as those for assessment of shock, damage, hydrodynamics, structures and cost. It also includes utilization of high performance computing (HPC) environments to achieve improved tool fidelity and efficiency. Lastly, it funds workforce development initiatives to develop the next generation naval engineering workforce. ***FY 2023 Plans:*** Continue development of ship design and analysis tools to improve efficiency and fidelity. Support mentorship, knowledge transfer, foundational training, and career development opportunities to develop the next generation naval engineering workforce. ***FY 2024 Base Plans:*** Increase development of ship design and analysis tools to improve efficiency and fidelity. Support mentorship, knowledge creation, capture, and transfer, foundational training, and career development opportunities to develop the next generation naval engineering workforce. Establish the Collaborative, Enduring, Concepts and Tools (COLLECT) effort which accelerates the warfighting advantage through the development of the engineering and analytic workforce along with the tools that enable their work. COLLECT continuously executes warfighting analysis and concept design across the surface force to validate warfighting requirements and the platforms that best host them, as opposed to the formerly ad hoc nature of those efforts. This will maintain an experienced workforce ready to execute engineering tasking and developing and sustaining the appropriate toolsets for their trades, including combat systems and mission level analysis, power and energy tools, and naval engineering and susceptibility analysis. The continuous efforts of COLLECT enable the efficient transition of appropriate capabilities into programs of record and validation of resource decision impacts. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase to FY 2024 budget from $1.939M to $5.000M increases scope and deliverables for the naval engineering workforce and the tool creation because of the standup of the COLLECT initiative.					
Title: Amphibious Capabilities Based Assessment	0.000	2.800	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 2196 / *Design, Tools, Plans and Concepts*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Articles:	-	-	-	-	-
Description: The Amphibious Capabilities Based Assessment (CBA) will identify capability gaps, capacity shortfalls, and risks in the amphibious force in the 2030s and beyond in the context of the Navy's projected roles, missions, and tasks. It will evaluate and prioritize the spectrum of mission needs and required capabilities for the future amphibious ships to support operational concepts in a contested environment; namely Distributed Maritime Operations (DMO), Littoral Operations in a Contested Environment (LOCE), and Expeditionary Advanced Base Operations (EABO). It will provide recommendations for potential non-materiel and materiel approaches to the gaps, including the need for modified or new amphibious ships to meet future needs and pace future threats. This analysis will ensure the Marines have the platforms, tactics, and equipment they need to operate effectively in the new USMC missions and operational profiles. This assessment will act as the analytic basis for the development of an Initial Capabilities Document (ICD) and inform a future Analysis of Alternatives (AoA). ***FY 2023 Plans:*** The Amphibious Capabilities Based Assessment (CBA) will identify capability gaps, capacity shortfalls, and risks in the amphibious force in the 2030s and beyond in the context of the Navy's projected roles, missions, and tasks. It will evaluate and prioritize the spectrum of mission needs and required capabilities for the future amphibious ships to support operational concepts in a contested environment; namely Distributed Maritime Operations (DMO), Littoral Operations in a Contested Environment (LOCE), and Expeditionary Advanced Base Operations (EABO). It will provide recommendations for potential non-materiel and materiel approaches to the gaps, including the need for modified or new amphibious ships to meet future needs and pace future threats. This analysis will ensure the Marines have the platforms, tactics, and equipment needed to operate effectively in the new USMC missions and operational profiles. This assessment will act as the analytic basis for the development of an Initial Capabilities Document (ICD) and inform a future Analysis of Alternatives (AoA). ***FY 2024 Base Plans:*** No FY 2024 Base Plans, as this was an FY 2023 funded activity in PU 2196. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Funding decrease due to no planned tasking in FY 2024.					
Accomplishments/Planned Programs Subtotals	15.256	17.369	15.345	0.000	15.345

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 2196 / *Design, Tools, Plans and Concepts*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This is a non-acquisition program for engineering and analysis to inform Navy leadership decisions and plans, as well as to improve and sustain Navy capabilities for ship design and analysis. Work is performed by Navy Warfare Centers and Government Labs with contractor support.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 2196 / *Design, Tools, Plans and Concepts*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPFF	FSCF Analysis Various Contractors : Various	9.803	1.000	Jan 2022	0.800	Feb 2023	0.800	Feb 2024	-		0.800	Continuing	Continuing	Continuing
Systems Engineering	WR	FSCF Analysis NSWC : Various	13.060	8.485	Oct 2021	7.416	Oct 2022	5.880	Oct 2023	-		5.880	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	NCIP NSMA : Washington DC	0.700	1.000	Jan 2022	1.000	Feb 2023	1.000	Feb 2024	-		1.000	Continuing	Continuing	Continuing
Systems Engineering	WR	NCIP NSWC : Various	0.300	3.271	Nov 2021	3.414	Oct 2022	2.665	Oct 2023	-		2.665	Continuing	Continuing	Continuing
Systems Engineering	WR	Tools & Workforce Development NSWC : Various	0.750	1.500	Jan 2022	1.939	Oct 2022	5.000	Oct 2023	-		5.000	Continuing	Continuing	Continuing
Systems Engineering	WR	Amphibious CBA NSWC : Various	0.000	0.000		1.000	Nov 2022	0.000		-		0.000	0.000	1.000	-
Systems Engineering	C/CPFF	Amphibious CBA Various Contractors : Various	0.000	0.000		1.800	Feb 2023	0.000		-		0.000	0.000	1.800	-
		Subtotal	24.613	15.256		17.369		15.345		-		15.345	Continuing	Continuing	N/A

Remarks

Funding increase in support of the Collaborative Enduring Concepts and Tools (COLLECT) effort.

	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	24.613	15.256		17.369		15.345		-		15.345	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 2196 / *Design, Tools, Plans and Concepts*

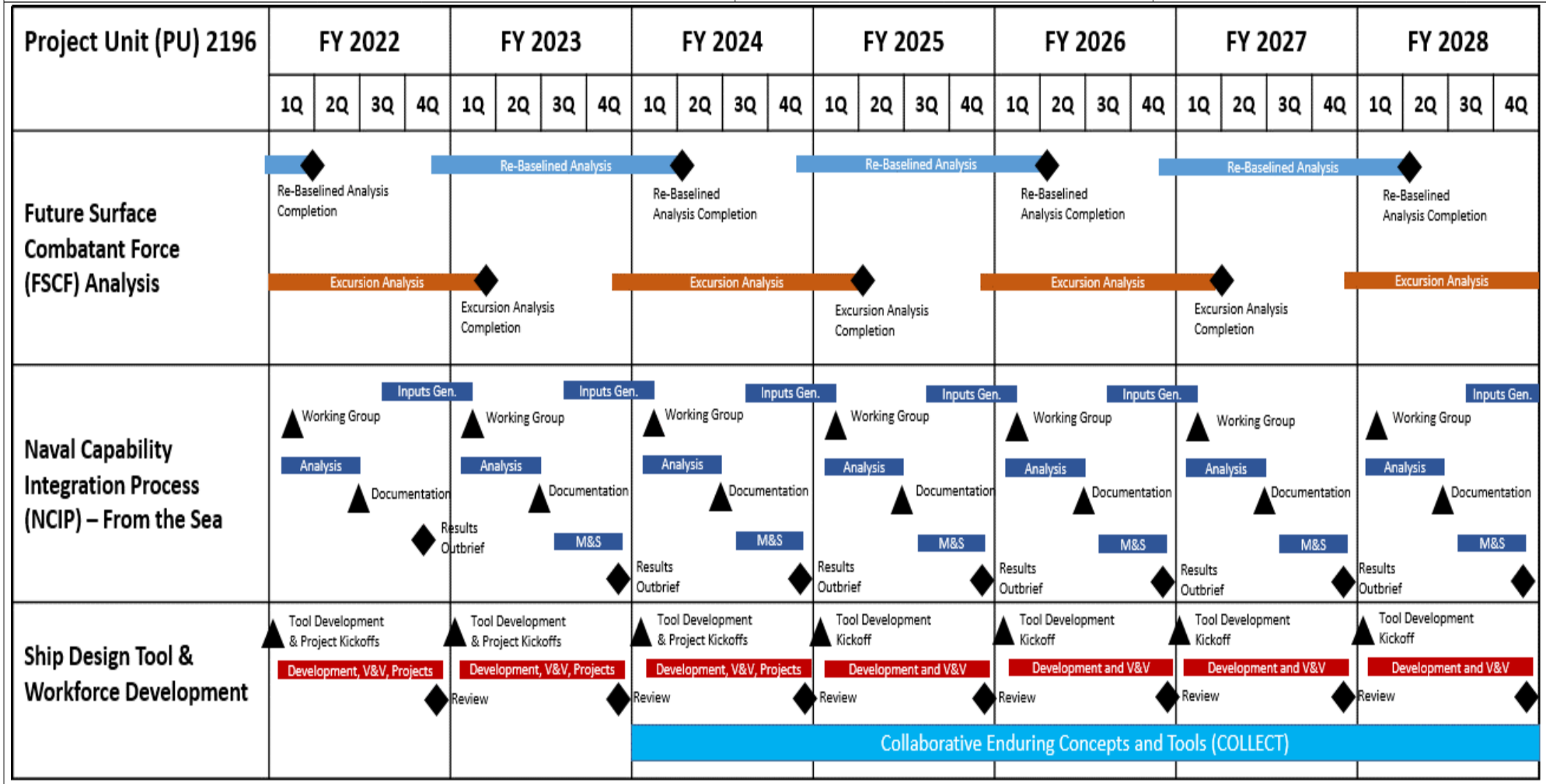

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 2196 / *Design, Tools, Plans and Concepts*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2196				
Proj 2196A: Future Surface Combatant Force Analysis	1	2022	4	2028
Proj 2196B: Naval Capability Integration Process - From the Sea	1	2022	4	2028
Proj 2196C: Ship Design Tools Development	1	2022	4	2028
Proj 2196D: Amphibious Capabilities Based Assessment (CBA)	1	2023	1	2024

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603563N / *Ship Concept Advanced Design*	Project (Number/Name) 3161 / *NAVSEA Tech Authority*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3161: *NAVSEA Tech Authority*	282.574	13.612	11.569	11.466	-	11.466	8.639	8.701	8.784	8.929	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Cross Platform System Development (CPSD) Pillars were re-baselined in FY19 to better address CNO and NAVSEA Chief Engineer (SEA05) technical priorities. Starting in FY23 the CPSD will evolve away from the Pillar structure to improve efficiency.

A. Mission Description and Budget Item Justification

This project has been established to support the NAVSEA Technical Authority with the coordination of design and development efforts for cross-platform applicability to result in more affordable, mission-capable, and interoperable surface ship forces including ships that are less expensive to build and operate with reduced manning, reduced support costs, and greater utilization of emerging technology.

NAVSEA Tech Authority efforts under Project Unit (PU) 3161, known as the Cross Platform Systems Development (CPSD) Program, transition directly to early-stage ship design for Ship Preliminary Design and Feasibility Studies and other Program Executive Office (PEO) ship design programs. While these efforts support concept exploration and mission needs assessment for potential future ship acquisition programs, they also develop cross-program technology solutions and associated Technical Authority products. The CPSD efforts are not direct efforts for specific, authorized shipbuilding programs. This project is the only R&D effort that provides a coordinated, collaborative approach to the development of cross-platform naval ship and weapon system design, as well as engineering capabilities in the areas of design tools, criteria, and methods. The CPSD project also provides innovative solutions for current fleet issues involving Technical Authority, such as interoperability issues with new systems or platforms and/or broad technology insertion topics. In addition, PU 3161 also includes Additive and Advanced Manufacturing Technology, which focuses heavily on naval ship-specific Additive Manufacturing (AM) technology and transition.

In FY23, CPSD is re-baselined to improve efficient and resilient alignment to CNO and NAVSEA Chief Engineer (SEA05) technical requirements and priorities. CPSD maintains the use of established functional areas for scope prioritization and portfolio diversification; however, the use of pillars for funding allocation has hindered responsiveness and agility. New in FY23, CPSD established the project focusing on the functional area "Support of Technical Authority."

Project Unit 3161 includes efforts of the Additive Manufacturing (AM) program. The AM program focuses on development and use of AM equipment for Naval applications in land-based and afloat applications, including system performance requirements, shipboard integration requirements and considerations, material selection, design optimization, equipment and component certification, and digital engineering integration. Efforts also include considerations of AM applicability across a wide variety of potential applications ensuring AM manufactured components can meet mission requirements.

In FY24, Project Unit 3161 also includes the Learning to Action Board (L2AB) Firefighting Program. Following the USS Bonhomme Richard fire, the L2AB Firefighting Program was stood up to research and develop solutions for damage control and firefighting issues identified in a subsequent Major Fires Review. This program funds

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critical efforts in shipboard fire detection/suppression systems, fire prevention features, and advanced firefighting equipment. Programs that were directed by the Vice Chief of Naval Operations will be tracked to completion.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Ship Technology Improvements (CPSD A)	1.300	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: This effort funds the analysis of ship system technologies to reduce design and construction costs. This also includes the development of validation tools to certify the safety and mission capability of platform concepts and eventually ships. ***FY 2023 Plans:*** The use of pillars as a funding function is discontinued in FY 2022. The program intends to track funds at the project level to increase agility and responsiveness to the changing naval environment. ***FY 2024 Base Plans:*** N/A ***FY 2024 OCO Plans:*** N/A					
Title: Fleet Maintenance and Life Cycle Cost Reduction (CPSD B)	1.512	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: This effort funds the development of tools, analyses and technologies to reduce fleet life cycle costs, reduce life-cycle failure risk and improved refurbishment cycles. This will allow the Navy to better meet fleet operational and technical requirements and lower cost. ***FY 2023 Plans:*** The use of pillars as a funding function is discontinued in FY 2022. The program intends to track funds at the project level to increase agility and responsiveness to changing naval environment. ***FY 2024 Base Plans:*** N/A ***FY 2024 OCO Plans:*** N/A					
Title: Additive and Advanced Manufacturing Technology	10.563	7.958	6.564	0.000	6.564
Articles:	-	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Description: This effort funds the development of additive manufacturing technologies, advanced coating techniques, design and topology optimization, materials selection, characterization and process development. ***FY 2023 Plans:*** FY23 funding continues additive manufacturing (AM) technology RDT&E for metal and polymer components including materials characterization and process development, development of AM design and manufacturing standards, application and technical data package development; determining AM equipment performance requirements in dynamic environments (i.e. shipboard), ship integration requirements for AM equipment, afloat AM qualification of equipment and certification of components in shipboard environments and navy-specific AM industrial base requirements including digital file transfer and cyber. This funding will also enable exploration for the additive manufacturing of energetic materials and manufacturing/repair of printed circuit boards for electronic applications. ***FY 2024 Base Plans:*** FY24 funding continues additive manufacturing (AM) technology RDT&E for metal and polymer components including materials characterization and process development, development of AM design and manufacturing standards, application and technical data package development; determining AM equipment performance requirements in dynamic environments (i.e. shipboard), ship integration requirements for AM equipment, afloat AM qualification of equipment and certification of components in shipboard environments and navy-specific AM industrial base requirements including digital file transfer and cyber. This funding will also enable continued exploration for the additive manufacturing of energetic materials and manufacturing/repair of printed circuit boards for electronic applications. This funding will also begin investment in specification and standard development for binder jetting AM technology. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Reduction in the budget from FY 2023 to FY 2024 of $1.394M is due to technical publications (tech pub) development in FY 2023 and we will also install and evaluate our metal system for shipboard use in FY23, causing a reduction in the scope of work from FY 2023 to FY 2024.					
Title: Digital Framework/Electromagnetic Environment and Development (CPSD D) ***Articles:*** ***Description:*** Develop an understanding of the wireless electromagnetic environment (EME) on numerous ship classes and the vulnerability of these systems to hacking. ***FY 2023 Plans:*** The use of pillars as a funding function is discontinued in FY 2022. The program intends to track funds at the project level to increase agility and responsiveness to a changing naval environment. ***FY 2024 Base Plans:*** N/A ***FY 2024 OCO Plans:*** N/A	0.237 -	0.000 -	0.000 -	0.000 -	0.000 -
Title: CPSD Support of Technical Authority ***Articles:*** ***Description:*** The CPSD effort funds the analysis of ship system technologies to reduce design and construction costs and tools, analyses and technologies to reduce fleet life cycle costs, reduce life-cycle failure risk and improved refurbishment cycles. Efforts also include the development of validation tools to certify the safety and mission capability of platform concepts and eventually ships, development of advanced manufacturing capabilities, understanding of advanced and additive manufacturing technical properties pertaining to their application in a naval environment, develop an understanding of the changing electromagnetic environment (EME) in the naval environment, adjust and develop practices and standards, development an understanding of digital engineering processes, methodologies, and systems for efficient and cost effective engineering analysis, risk analysis, and risk reduction. CPSD also supports technical authority needs for emerging unmanned systems platforms. ***FY 2023 Plans:*** In FY 2023, continue the development of ship construction technology improvements to reduce risk related to alternative technical architectures and designs. Current planned align to technical pillars as follows: Additive &	0.000 -	3.611 -	3.745 -	0.000 -	3.745 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Advanced Manufacturing, Digital Framework / Electromagnetic Environment, Fleet Maintenance & Life Cycle Cost Reduction, Ship Technology Improvements, and CHENG Emergent Technical Needs. The following efforts are scheduled for completion upon exhaustion of FY23 funds: (*)Computed Tomography (Ship Tech Improvement) - a 3-dimensional non-destructive evaluation technique for new & complex parts including additively manufactured parts. (*)DC Arc Flash (Ship Tech Improvement) - identification of safety risk to ship and sailors of Electric Power / Direct Current Arc flashes critical to use of DC power sources for directed energy weaponry (*)Efficient Thermal Management Architecture - creation of a prototype architecture to enable 'sharing' of cooling through ship providing cooler where it is needed - enabler of directed energy weaponry (*)Mitigation of Stress Corrosion Cracking (Fleet Maint & LCC Reduction) - Mitigate stress corrosion cracking of Aluminum alloys utilized in fleet and under consideration for use on new platform designs (FFG, DDG(X), USVs) (*)Propulsion Shaft Sleeve Life Enhancement (Fleet Maint & LCC Reduction) - increase life of sleeve surrounding & protecting propulsion shaft. FY 2023 funds culminate in installation onboard US Navy asset (pending ship avail schedule slip). The following efforts are scheduled to begin as new efforts using FY23 funds: (*) Shock Analysis M&S of surface ship undersea appendages - This study will further investigate shock environment of undersea appendages leveraging FFG62 testing to enhance and refine M&S capabilities for future analysis needs and requirement development. (*) Hybrid Laser Arc Welding - detailing a method for evaluating HLAW toughness without the use of time- and labor-intensive SE testing and a set of standardized HLAW qualification requirements. (*) Bonded Fuel Tank Repair - establish the time for pressurized fuel oil to compromise a bonded repair applied to holes in steel fuel oil tanks and develop improved procedures necessary to perform the repairs. (*) Magnetic Treatment Study - Investigation of Necessity of post-construction Magnetic Treatment for surface ships with Advanced Degaussing systems. (*) Sensitization Prediction of AI photography using Machine Learning - Image-based machine learning (ML) techniques will be utilized to develop a software tool capable of accurately predicting DOS of an unknown image for all relevant types of marine grade AI.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
(*) Investigation of use of Composition D for rolled non-skid applications - demonstrate non-skids on surface ships to validate their performance, add to the qualified products database (QPD) as approved products, then transition to the fleet for use. ***FY 2024 Base Plans:*** FY 2024 plans include: (*)Emerging Radar Electromagnetic Environment (Ship Tech Improvement) - Enhance current M&S capabilities to increase analytical detail, decrease risk, and decrease ship-by-ship survey requirement applying M&S to Hazards of Electromagnetic Radiation to Ordnance (HERO) program and others. (*)Tie-Down Fitting Preservation (Fleet Maint & LCC Reduction) - Increase life of US Navy tie-downs used to secure aircraft and materiel. These tie-downs are extreme cost to US NAVY require significant replacement (*) Transformer Standards (Ship Tech Improvement) - Update current 1980s specification for US Navy ship electric power transformers including use of 3-phase transformers being pushed by industry. (*) Rudder Twisted Encapsulation (Fleet Maint & LCC Reduction) - Utilize innovative encapsulation method to reinforce rudder and create a twisted provide to decrease cavitation. Results will increase life-space of legacy 'fleet rudders'. FY24 culminates in installation onboard US Navy platform (pending ship avail schedule). (*) Hybrid Laser Arc Welding - detailing a method for evaluating HLAW toughness without the use of time- and labor-intensive SE testing and a set of standardized HLAW qualification requirements. (*) Bonded Fuel Tank Repair - establish the time for pressurized fuel oil to compromise a bonded repair applied to holes in steel fuel oil tanks and develop improved procedures necessary to perform the repairs. (*) Magnetic Treatment Study - Investigation of Necessity of post-construction Magnetic Treatment for surface ships with Advanced Degaussing systems. (*) Sensitization Prediction of AI photography using Machine Learning - Image-based machine learning (ML) techniques will be utilized to develop a software tool capable of accurately predicting DOS of an unknown image for all relevant types of marine grade AI. (*) Investigation of use of Composition D for rolled non-skid applications - demonstrate these nonskids on surface ships to validate their performance, add to the qualified products database (QPD) as approved products, then transition to the fleet for use. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
CPSD budget increase from FY23 to FY24 is associated with the inclusion of the Learning 2 Action Board (L2AB) aligned firefighting research & development efforts.					
Title: Learning to Action Board (L2AB) Recommended Fire Detection/Suppression	0.000	0.000	1.157	0.000	1.157
Articles:	-	-	-	-	-
Description: The L2AB Recommended Fire Detection/Suppression program was stood up to research & develop solutions to damage control and firefighting issues identified in a subsequent Major Fires Review following the 2020 USS Bonhomme Richard fire. This program funds critical efforts in shipboard fire detection/ suppression systems, fire prevention features, and advanced firefighting equipment; track programs to completion that were directed by the Vice Chief of Naval Operations.					
FY 2023 Plans: N/A					
FY 2024 Base Plans: Fund research & development for the following technologies: Torpedo suppression, Aviation Hose Devices, Nexgen FACUs, wireless FDS, FDS Network Tool, Alternate Fire Detectors. Torpedo Suppression: Characterize Torpedo Room fire hazard across submarine Fleet. Research and evaluate available suppression technologies that mitigate, suppress, or extinguish shipboard fire threats before catastrophic events involving munitions occur. Perform ship-check and data collection for development of Phase I SCD. Perform ship-check and data collection for development of Phase I SCD. Mature SCD and perform SHIPALT. Aviation Hose Devices: Research, procure and deploy replacement units. Perform NRE and develop prototype for FAT and verification. NEXGEN FACUs: Qualify and install next generation FACUs. Perform ship-check with OEM and either PY or an AIT and PY/AIT to develop SIDs for eventual installation. Wireless FDS: NSWCPD 336 conduct a study and provide alternate solutions. Travel to waterfronts, conduct study and provide alternate solutions. Procure one prototype system to install on a ship during an availability. Assess the efficacy of prototype system. Support waterfront activities in procuring and implementing alternate solutions.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FDS Network Tool: FDS ISEAs develop a tool documenting FDS configuration including FACUs, DAUs/IOUs, network switches, alarm consoles, and associated power panels to each per ship class. The FSC can then look at the planned work for an avail and use the tool to indicate which components will be taken offline by the planned industrial work. The tool will then illustrate the percentage of the system taken offline, the number of compartments without detection coverage, and where on the ship detection is lacking. Collect data on each ship class and build preliminary spreadsheet version of the risk assessment tool. Mature the tool and disseminate to Fire Safety Councils. Follow-on funding for tool maturation and deployment TBD. Alternate Fire Detectors: Find an alternate vendor to qualify compatible smoke, heat, and flame detectors. Write Performance spec and work with item manager to compete on contract. Possible witnessing Environmental Qualification Testing, working with item manager to develop provisioning. Follow-on work cost TBD and RDT&E. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase in funding from FY23 to FY24 is due to critical efforts in shipboard fire detection/suppression systems, fire prevention features, advanced firefighting equipment, and the tracking of programs to completion that were directed by the Vice Chief of Naval Operations.					
Accomplishments/Planned Programs Subtotals	13.612	11.569	11.466	0.000	11.466

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• RDTEN/0204202N: *DDG-1000*	112.576	197.436	98.223	-	98.223	35.404	25.462	4.617	0.000	Continuing	Continuing
• RDTEN/0603512N: *Carrier Systems Development*	7.182	11.567	10.085	-	10.085	7.789	7.788	7.697	0.000	Continuing	Continuing
• RDTEN/0603564N: *Preliminary Design/Feasibility Studies.*	40.774	75.327	119.213	-	119.213	50.475	44.541	44.809	0.000	Continuing	Continuing
• RDTEN/0604567N: *Ship Contcept Design/Live Fire T&E*	54.829	60.791	58.149	-	58.149	58.576	40.996	40.503	0.000	Continuing	Continuing
• RDTEN/0603582N: *Combat System Integration*	17.322	18.236	18.589	-	18.589	18.291	18.608	18.870	0.000	Continuing	Continuing

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

This is a non-acquisition program that develops, evaluates, and validates early stages of total ship concepts and technologies in support of SCN planning and potential future ship acquisition programs. This program also supports development, demonstration, evaluation, and validation of engineering tools, methods, and criteria for those concept designs and assessments. This program provides validated engineering tools, methods, and criteria for ship, and weapon system concept designs and assessments while fostering collaboration and coordination of efforts resulting in more effective use of funding.

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CPSD Systems Engineering	C/CPFF	Various Contractors : Various	18.786	0.000		0.458	May 2023	0.493	May 2024	-		0.493	Continuing	Continuing	Continuing
CPSD Engineering Support	WR	NSWCCD, NSWCPD, NRL : Various	64.355	0.745	Jan 2022	0.116	Oct 2022	0.094	Nov 2023	-		0.094	Continuing	Continuing	Continuing
CPSD Test and Evaluation	WR	NSWC : Various	12.111	0.000		0.232	Sep 2023	0.214	Sep 2024	-		0.214	Continuing	Continuing	Continuing
CPSD Systems Engineering	WR	NSWC DD : Dahlgren, VA	1.440	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
CPSD Systems Engineering	WR	NSWC CD : Carderock, MD	6.458	0.511	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
CPSD Systems Engineering	WR	NSWC PD : Philadelphia, PA	3.630	1.000	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
CPSD Engineering Development	WR	NRL : Washington, D.C.	0.389	0.500	Nov 2021	0.232	Sep 2023	0.314	Sep 2024	-		0.314	Continuing	Continuing	Continuing
CPSD Engineering Development	WR	NSWC DD : Dahlgren, VA	2.584	0.000		0.207	Oct 2022	0.050	Nov 2023	-		0.050	Continuing	Continuing	Continuing
CPSD Engineering Development	WR	NSWC CD : Carderock, MD	5.143	0.000		1.490	Oct 2022	1.814	Nov 2023	-		1.814	Continuing	Continuing	Continuing
CPSD Engineering Development	WR	NSWC PD : Philadelphia, PA	2.330	0.000		0.668	Nov 2022	0.569	Nov 2023	-		0.569	Continuing	Continuing	Continuing
CPSD SBIR Withold	WR	Various : SBIR Withold	0.000	0.122	Jan 2022	0.144	Jan 2023	0.151	Jan 2024	-		0.151	Continuing	Continuing	Continuing
Cybersecurity Technologies	C/CPFF	JHU/APL : Baltimore, MD	10.331	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Cybersecurity Technologies	C/CPFF	MITRE : McLean, VA	1.108	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Cybersecurity Technologies	MIPR	PNNL DOE : Richland, WA	0.900	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Cybersecurity Technologies	WR	NUWC Keyport : Keyport, WA	0.550	0.000		0.000		0.000		-		0.000	0.000	0.550	-
Cybersecurity Technologies	WR	NUWC Newport : Newport, RI	2.306	0.000		0.000		0.000		-		0.000	0.000	2.306	-

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Cybersecurity Technologies	WR	NSWC Crane : Crane, IN	0.700	0.000		0.000		0.000		-		0.000	0.000	0.700	-
Cybersecurity Technologies	WR	NSWC DD : Dahlgren, VA	15.914	0.000		0.000		0.000		-		0.000	0.000	15.914	-
Cybersecurity Technologies	WR	NSWC PD : Philadelphia, PA	4.600	0.000		0.000		0.000		-		0.000	0.000	4.600	-
Additive Manufacturing	WR	NSWC CD : Carderock, MD	5.678	3.899	Nov 2021	2.261	Nov 2022	1.441	Nov 2023	-		1.441	Continuing	Continuing	Continuing
Additive Manufacturing	Various	NSWC PD : Philadelphia, PA	2.424	1.810	Nov 2021	1.360	Nov 2022	1.000	Nov 2023	-		1.000	Continuing	Continuing	Continuing
Additive Manufacturing	Various	NUWC Newport : Newport, RI	0.603	0.264	Nov 2021	0.196	Nov 2022	0.200	Nov 2023	-		0.200	Continuing	Continuing	Continuing
Additive Manufacturing	WR	NUWC Keyport : Keyport, WA	0.100	0.000		0.000		0.000		-		0.000	0.000	0.100	-
Additive Manufacturing	Various	NUWC Keyport : Mechanicbsurg, PA	0.068	0.199	Nov 2021	0.150	Nov 2022	0.100	Nov 2023	-		0.100	Continuing	Continuing	Continuing
Additive Manufacturing	C/CPFF	JHU APL : Baltimore, MD	0.884	1.680	Jan 2022	0.800	Jan 2023	0.500	Nov 2023	-		0.500	Continuing	Continuing	Continuing
Additive Manufacturing	C/CPFF	PSU ARL : State College, PA	0.825	0.150	Jan 2022	0.000		0.000		-		0.000	0.000	0.975	-
Additive Manufacturing	C/CPFF	Various Contracts : Various	2.055	0.414	Jan 2022	0.307	Jan 2023	0.300	Jan 2024	-		0.300	Continuing	Continuing	Continuing
Additive Manufacturing	WR	NRL : Washington DC	0.125	0.000		0.000		0.000		-		0.000	0.000	0.125	-
Additive Manufacturing	WR	NSWC Port Hueneme : Port Hueneme, CA	0.075	0.068	Jan 2022	0.050	Nov 2022	0.050	Nov 2023	-		0.050	Continuing	Continuing	Continuing
Additive Manufacturing	WR	NAVAIR : Patuxent River, MD	0.100	0.075	Nov 2021	0.056	Nov 2022	0.050	Nov 2023	-		0.050	Continuing	Continuing	Continuing
Additive Manufacturing	WR	NSWC Crane : Crane, IN	0.153	0.150	Jul 2022	0.111	Nov 2022	0.250	Nov 2023	-		0.250	Continuing	Continuing	Continuing

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Additive Manufacturing	WR	NSWC IH : Indian Head, MD	0.319	0.300	Nov 2021	1.150	Nov 2022	1.390	Nov 2023	-		1.390	Continuing	Continuing	Continuing
Additive Manufacturing	WR	Various : Not Specified	0.480	0.492	Nov 2021	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Additive Manufacturing	Various	Various : SBIR Withold	0.656	0.134	Jan 2022	0.318	Jan 2023	0.256	Jan 2024	-		0.256	Continuing	Continuing	Continuing
NCR2T AM	WR	Various : Not Specified	1.275	0.000		0.000		0.000		-		0.000	0.000	1.275	-
NCR2T CPSD	WR	Various : Not Specified	0.776	0.000		0.000		0.000		-		0.000	0.000	0.776	-
NCR2T BTR	C/CPFF	Various : Not Specified	4.400	0.000		0.000		0.000		-		0.000	0.000	4.400	-
Prior Years G/WR	WR	Various : Not Specified	89.747	0.000		0.000		0.000		-		0.000	0.000	89.747	-
Prior Years C/CPFF	C/BA	Various : Not Specified	4.899	0.000		0.000		0.000		-		0.000	0.000	4.899	-
Additive Manufacturing	WR	NUWC Keyport : Portsmouth, NH	0.290	0.320	Oct 2021	0.237	Nov 2022	0.100	Nov 2023	-		0.100	Continuing	Continuing	Continuing
Additive Manufacturing	WR	NAVSUP : Mechanicsburg, PA	0.000	0.175	Jan 2022	0.130	Nov 2022	0.100	Nov 2023	-		0.100	Continuing	Continuing	Continuing
CPSD Engineering Development	WR	NRL : Washington, DC	0.000	0.000		0.057	Oct 2022	0.039	Nov 2023	-		0.039	Continuing	Continuing	Continuing
Additive Manufacturing	WR	GSA : Washington, DC	0.000	0.046	Feb 2022	0.034	Feb 2023	0.050	Feb 2024	-		0.050	Continuing	Continuing	Continuing
L2AB Firefighting Program	MIPR	Various : Washington, DC	0.000	0.000		0.000		0.139	Sep 2024	-		0.139	Continuing	Continuing	Continuing
L2AB Firefighting Program	C/BA	NSWCPD : Philadelphia, PA	0.000	0.000		0.000		1.018	Sep 2024	-		1.018	Continuing	Continuing	Continuing
		Subtotal	269.567	13.054		10.764		10.682		-		10.682	Continuing	Continuing	N/A

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Cybersecurity Technologies	WR	NSWC CD : Carderock, MD	2.569	0.000		0.000		0.000		-		0.000	0.000	2.569	-
Cybersecurity Technologies	MIPR	NIWC : Various	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
Cybersecurity Technologies	C/CPFF	Various Contractors : Various	3.303	0.000		0.000		0.000		-		0.000	0.000	3.303	-
		Subtotal	6.372	0.000		0.000		0.000		-		0.000	0.000	6.372	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NSWC CD : Carderock, MD	0.950	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	C/CPFF	JHU/APL : Baltimore, MD	1.650	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NSWC PD : Philadelphia, PA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
		Subtotal	2.600	0.000		0.000		0.000		-		0.000	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM/Travel	Allot	NAVSEA HQ : Washington, DC	0.999	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Mgmt Spt	WR	NSWC CD : Carderock, MD	1.250	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Mgmt Spt	C/CPFF	CSC : Washington, D.C.	0.815	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3161 / *NAVSEA Tech Authority*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Cybersecurity Technologies	C/CPFF	CSC : Washington, D.C.	0.250	0.000		0.000		0.000		-		0.000	0.000	0.250	-
Cybersecurity Technologies	C/CPFF	Alion : Washington, D.C.	0.250	0.000		0.000		0.000		-		0.000	0.000	0.250	-
Cybersecurity Technologies	MIPR	NAVSEA HQ : Washington, D.C.	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
Additive Manufacturing	C/CPFF	Various : Various	0.464	0.508	Jun 2022	0.748	Oct 2022	0.694	Oct 2023	-		0.694	Continuing	Continuing	Continuing
Additive Manufacturing	Allot	Various : Not Specified	0.007	0.050	Dec 2021	0.057	Dec 2022	0.090	Dec 2023	-		0.090	Continuing	Continuing	Continuing
		Subtotal	4.035	0.558		0.805		0.784		-		0.784	Continuing	Continuing	N/A

	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	282.574	13.612		11.569		11.466		-		11.466	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3161 / *NAVSEA Tech Authority*

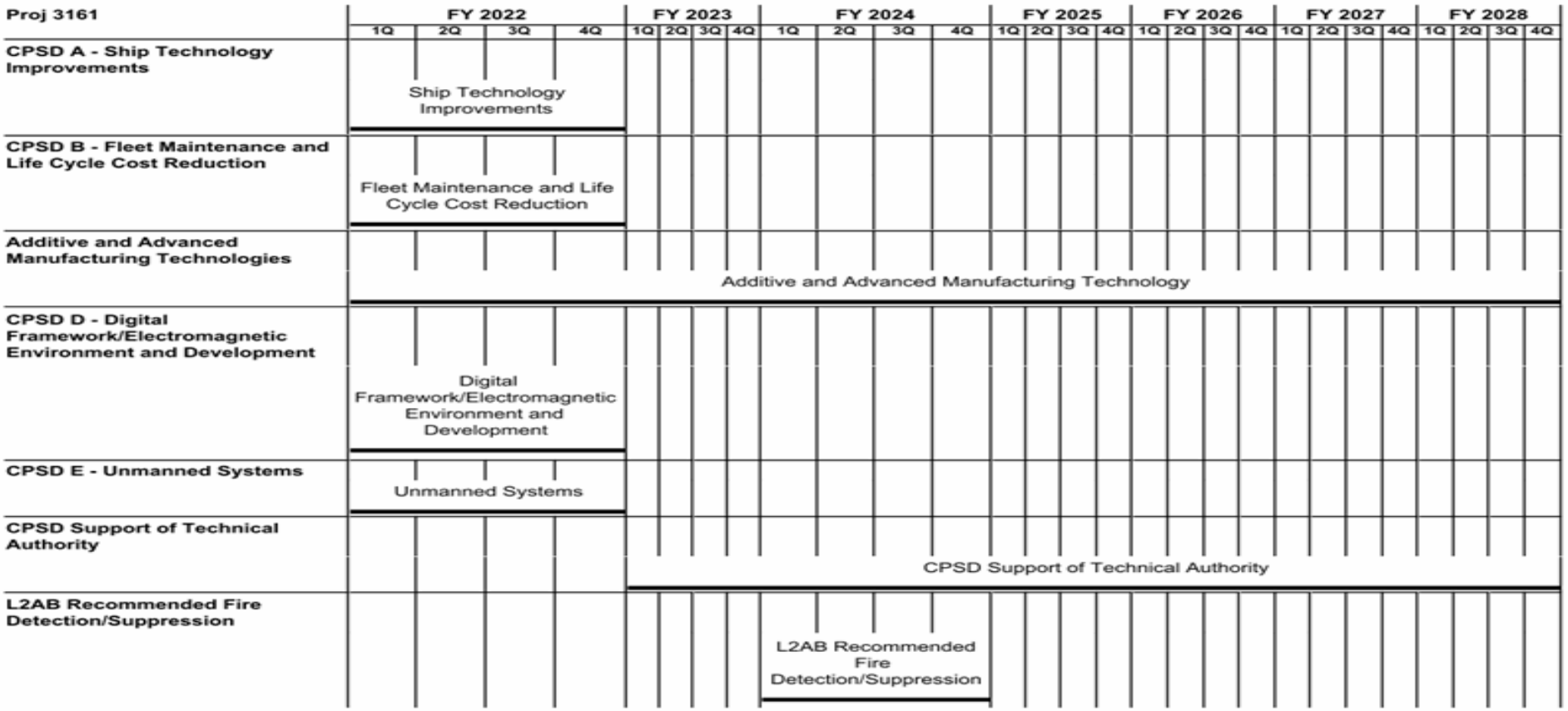

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3161 / *NAVSEA Tech Authority*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3161				
CPSD A - Ship Technology Improvements:	1	2022	4	2022
CPSD B - Fleet Maintenance and Life Cycle Cost Reduction:	1	2022	4	2022
Additive and Advanced Manufacturing Technologies:	1	2022	4	2028
CPSD D - Digital Framework/Electromagnetic Environment and Development:	1	2022	4	2022
CPSD E - Unmanned Systems:	1	2022	4	2022
CPSD Support of Technical Authority:	1	2023	4	2028
L2AB Recommended Fire Detection/Suppression:	1	2024	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603563N / *Ship Concept Advanced Design*	Project (Number/Name) 3244 / *Cybersecurity Engineering*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3244: *Cybersecurity Engineering*	15.468	14.914	15.509	36.117	-	36.117	37.628	38.138	38.648	39.160	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This effort funds two critical Cybersecurity programs, Situational Awareness Boundary Enforcement and Response (SABER) and USS SECURE. SABER is the research, design, development, testing, and installation of Cybersecurity solutions for installed integrated computer networks to include shipboard Hull Mechanical and Electrical (HM&E), Navigation Systems, Combat Systems, Fire Control, Sonar, Radar, Communications and other shipboard computerized control systems for all afloat U.S. Navy platforms. USS SECURE is a cross-SYSCOM, operationally representative, distributed system of systems test environment that supports cybersecurity testing at the system, enclave, platform, and strike group level.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Cybersecurity	14.914	15.509	36.117	0.000	36.117
Articles:	-	-	-	-	-
FY 2023 Plans: SABER will execute two annual red team events as required for test and evaluation of Defensive Cyber Operations (DCO) capabilities. The Software Capability Toolkit (SCT) team will validate, qualify, and then incorporate five additional capabilities in FY 2023. This program will continue its mission to support the necessary development of core SABER software by delivering two software releases in FY 2023. This will support the configuration and assist PEO's in the deployment of advanced defensive cyber capabilities on afloat Navy platforms. As the Lead Cross-Platform Integration Manager, NAVSEA 03C will continue to manage and conduct all the non-recurring engineering, modifications, tailoring, and provide support to PEOs for life cycle maintenance and rule set maturity as executed by the respective PEOs. Manage SABER Configuration Control Board (CCB) to support existing installations and prioritize engineering changes to support unique OT for FY24 and FY25 installations. Software lifecycle sustainment requirements of reliability, maintainability, and supportability will be completed to support the 11 shipboard installations in FY 2023 and support the 14 SABER systems in the Fleet. In FY 2023, the program will stand up the Collection Architecture Integrated Product Team (IPT) to prepare for the Collection Architecture expansion in FY 2024. The program will continue develop and mature Enumeration Technology Tools, Testing Procedures and Technology deliverable process preparing for an expansion in FY 2024. The team plans to execute at a minimum 4 scans and will deliver Hull Mechanical and Electrical (HM&E) network maps.					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3244 / *Cybersecurity Engineering*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
In FY 2023, this program will continue the integration of SABER on Navigation, Aviation, and Combat Enclaves for Afloat Platforms. In FY 2023, the program will increase Cybersecurity Vulnerability Assessment Tool's (CVAST) Assessment capability at current SECRET instance in support of executing assessments. User beta team will execute user test plan Cybersecurity Vulnerability Assessment Tool (CVAST) in Secret High-Performance Computing (S HPC) Environment with the intent of going Full Operational Capability (FOC) in quarter 4 of FY 2023. This will enable end users to self-service CVAST tool for unclassified systems. Beginning in FY 2023, the CVAST team will begin building software updates, then will be installed on a HPC container and delivered for installation. The team will deliver at a minimum two software updates in FY 2023. The program will identify infrastructure and security requirements for the Top-Secret High-Performance Computing (TS HPC) Environment in support of allowing self-service CVAST for classified systems. TS HPC will be at Interim Operational Capability (IOC) by Quarter 4. Increase CVAST Assessment capability in support of executing CVAST assessments at the TS level for classified systems. The CVAST program will research the development and integration of other domains beyond Cyber (Program Protection, SCRM) into the CVAST tool. USS SECURE will continue to develop and expand the Navy's enterprise solution for addressing cyber-Test & Evaluation policy and requirements. Cybersecurity requirements are increasing to mitigate emerging threats and policy documents such as DODI 5000.89 are directing all system owners to improve cyber resiliency; for example, system owners must now perform iterative Developmental Testing (DT) and Operational Testing (OT) testing throughout the systems lifecycle. Many legacy systems must now incorporate these new cyber requirements into their lifecycle operations and will soon be looking for test capabilities. USS SECURE will prepare for the increasing demand by planning for more tests per year and tailoring testing services to the size, complexity, frequency, and lifecycle stage of the systems involved. USS SECURE will accommodate new acquisitions by adapting processes to support the different Adaptive Acquisition Framework Pathways. USS SECURE will conduct four Cyber Risk Assessments in FY 2023 and emergent testing needs that cannot be accommodated during those three events will be scheduled separately.					
FY 2024 Base Plans: In FY 2024, SABER integration will expand to Navigation, Aviation, and Combat Enclaves for Afloat Platforms. SABER program will increase research, development, testing and evaluation necessary to support upcoming ship installs to additional platforms. This includes expanding collection architecture to provide capabilities to new platform types and different technologies under protection. In FY 2024, the program will complete					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3244 / *Cybersecurity Engineering*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
annual updates to enumeration technology tools and signature maturity to support developing cyber threat requirements. Integration of Artificial Intelligence and Machine Learning methods and techniques will be ongoing in FY 2024. The program will enhance the cybersecurity capability by expanding the core SABER software while continuing periodic updates and will work with the Programs to ensure that configurations meet the need for advanced defensive cyber capabilities on afloat Navy platforms. As the Lead Cross-Platform Integration Manager, NAVSEA 03C will manages and lead the SABER Configuration Control Boards (CCB), continue to manage all non-recurring engineering, modifications, tailoring, and provide support to PEOs for continued deployment and life cycle maintenance. Software development, integration, maintenance, and lifecycle support will be provided for the 11 shipboard installations planned in FY24, and the 25 SABER systems currently being integrated on Shipboard. In FY 2024, this program will take on additional efforts previously conducted by PEO SHIPS to build of Hull, Mechanical, and Electrical (HM&E) cybersecurity computing hardware Lab units for NSWC Philadelphia Division, Philadelphia PA for ship integration testing to support installations in FY 2025 and FY 2026. FY24 efforts will evolve the design and development of second-generation Situational Boundary Enforcement & Response (SABER) Computing Hardware. This additional work will develop and test new Weasel Board variants as well as existing variants for additional ship classes. The efforts include the development of advanced surface ship Hull, Mechanical, and Electrical (HM&E) cyber security, which develops and tests various cyber security hardware that monitors the HM&E network and system communications to detect and deter potential cyber-attacks. HM&E cyber security hardware will transition to appropriate back-fit and forward fit ship installations, as appropriate, once development and testing completes. In FY 2024, this program continues transition of Cybersecurity Vulnerability Assessment Tool (CVAST) in the Top-Secret High-Performance Computing (TS HPC) Environment, which helps to scale the utilization for broader application across the Command. The program will install infrastructure to support TS communications, will maintain secret assessment capability and increase TS assessment capability. NAVSEA 03C will mature and validate the process by delivering software updates and conducting a beta test CVAST in (TS HPC) Environment with the intent of going Full Operational Capability (FOC) in Quarter 4 of FY 2024.					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3244 / *Cybersecurity Engineering*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
In FY24, NAVSEA 03C will continue collaboration with Program Offices and designated Warfare Centers to conduct land-based end-to-end system cyber-security testing. NAVSEA 03C will continue to develop and integrate additional Cybersecurity capabilities into future USS SECURE test events. USS SECURE will continue to refine and develop test processes and methods in order to respond to increased demand and tailoring testing services based on system complexity and lifecycle stage. USS SECURE plans to conduct three Cyber Risk Assessments in FY 2024 and will conduct other emergent tests as needed. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** The increase of $20.6M captures the full SABER HM&E requirement under one project (3244) and expands the team to provide technical software support to current fleet installations as well as core development for additional installations throughout the FYDP. The program's research and development will expand exponentially to ensure SABER is pacing the threat of Cyber to include incorporating Artificial Intelligence and Machine Learning (AI/ML), expanding the DevSecOps environment, incorporation of Enumeration Technology and expansion of Collection Architecture capabilities. The funding will be executed to existing partners at Field Activities, UARCs, Academia, and industry partners.					
Accomplishments/Planned Programs Subtotals	14.914	15.509	36.117	0.000	36.117

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This is a non-acquisition program that designs, develops, and tests Cybersecurity solutions and technologies in support of control systems and combat system enclaves for all afloat U.S. Navy platforms. The capabilities are transitioned to acquisition programs for installation and sustainment. This program sustains and expands the USS SECURE cybersecurity testing capability and infrastructure to ensure compliance with DoD and Navy Cybersecurity test and evaluation requirements in direct support of Navy acquisition programs.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603563N / *Ship Concept Advanced Design*	Project (Number/Name) 3244 / *Cybersecurity Engineering*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Cybersecurity Technologies	C/CPFF	JHU APL : Baltimore, MD	0.900	0.300	Oct 2021	0.300	Oct 2022	3.500	Oct 2023	-		3.500	Continuing	Continuing	Continuing
Cybersecurity Technologies	WR	NUWC Newport : Newport, RI	1.250	1.359	Oct 2021	1.400	Oct 2022	3.500	Oct 2023	-		3.500	Continuing	Continuing	Continuing
Cybersecurity Technologies	WR	NSWC DD : Dahlgren, VA	1.000	1.351	Oct 2021	1.400	Oct 2022	3.200	Oct 2023	-		3.200	Continuing	Continuing	Continuing
Cybersecurity Technologies	WR	NSWC PD : Philadelphia, PA	2.100	2.087	Oct 2021	2.200	Oct 2022	6.500	Oct 2023	-		6.500	Continuing	Continuing	Continuing
Cybersecurity Technologies	C/CPFF	Various Contractors : Various	1.200	0.625	Oct 2021	0.300	Oct 2022	1.777	Oct 2023	-		1.777	Continuing	Continuing	Continuing
Cybersecurity Technologies	MIPR	GSA : O'Fallon, IL	0.000	0.632	May 2022	0.700	May 2023	2.900	May 2024	-		2.900	Continuing	Continuing	Continuing
		Subtotal	6.450	6.354		6.300		21.377		-		21.377	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NSWC CD : Carderock, MD	0.300	0.500	Oct 2021	0.500	Oct 2022	0.700	Oct 2023	-		0.700	Continuing	Continuing	Continuing
Program Management Support	WR	NIWC PAC : San Diego, CA	0.237	0.277	Oct 2021	0.280	Oct 2022	0.300	Oct 2023	-		0.300	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	Various Contractors : Various	3.200	1.790	Jan 2022	0.200	Jan 2023	0.300	Oct 2023	-		0.300	Continuing	Continuing	Continuing
Program Management Support	MIPR	GSA : O'Fallon, IL	0.000	1.443	May 2022	2.079	May 2023	3.500	May 2024	-		3.500	Continuing	Continuing	Continuing
Program Management Support	MIPR	DTIC : Fort Belvior, VA	0.000	0.000		2.000	Oct 2022	3.500	Oct 2023	-		3.500	Continuing	Continuing	Continuing
		Subtotal	3.737	4.010		5.059		8.300		-		8.300	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3244 / *Cybersecurity Engineering*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWC CL : China Lake, CA	0.173	0.000	Oct 2021	0.000	Oct 2022	0.000		-		0.000	0.000	0.173	-
Developmental Test & Evaluation (DT&E)	WR	NSWC PD : Philadelphia, PA	0.090	0.000	Oct 2021	0.000	Oct 2022	0.000		-		0.000	0.000	0.090	-
Developmental Test & Evaluation (DT&E)	WR	NSWC CO : Corona, CA	0.830	1.200	Oct 2021	1.200	Oct 2022	1.300	Oct 2023	-		1.300	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NSWC DD : Dahlgren, VA	3.138	2.700	Oct 2021	2.700	Oct 2022	3.700	Oct 2023	-		3.700	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	MIPR	GSA : O'Fallon, IL	1.000	0.600	May 2022	0.150	May 2023	1.240	May 2024	-		1.240	Continuing	Continuing	Continuing
		Subtotal	5.231	4.500		4.050		6.240		-		6.240	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HQ PM Travel	Allot	NAVSEA HQ : Washington, DC	0.050	0.050	Oct 2021	0.100	Oct 2022	0.200	Oct 2023	-		0.200	Continuing	Continuing	Continuing
		Subtotal	0.050	0.050		0.100		0.200		-		0.200	Continuing	Continuing	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	15.468	14.914		15.509		36.117		-		36.117	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3244 / *Cybersecurity Engineering*

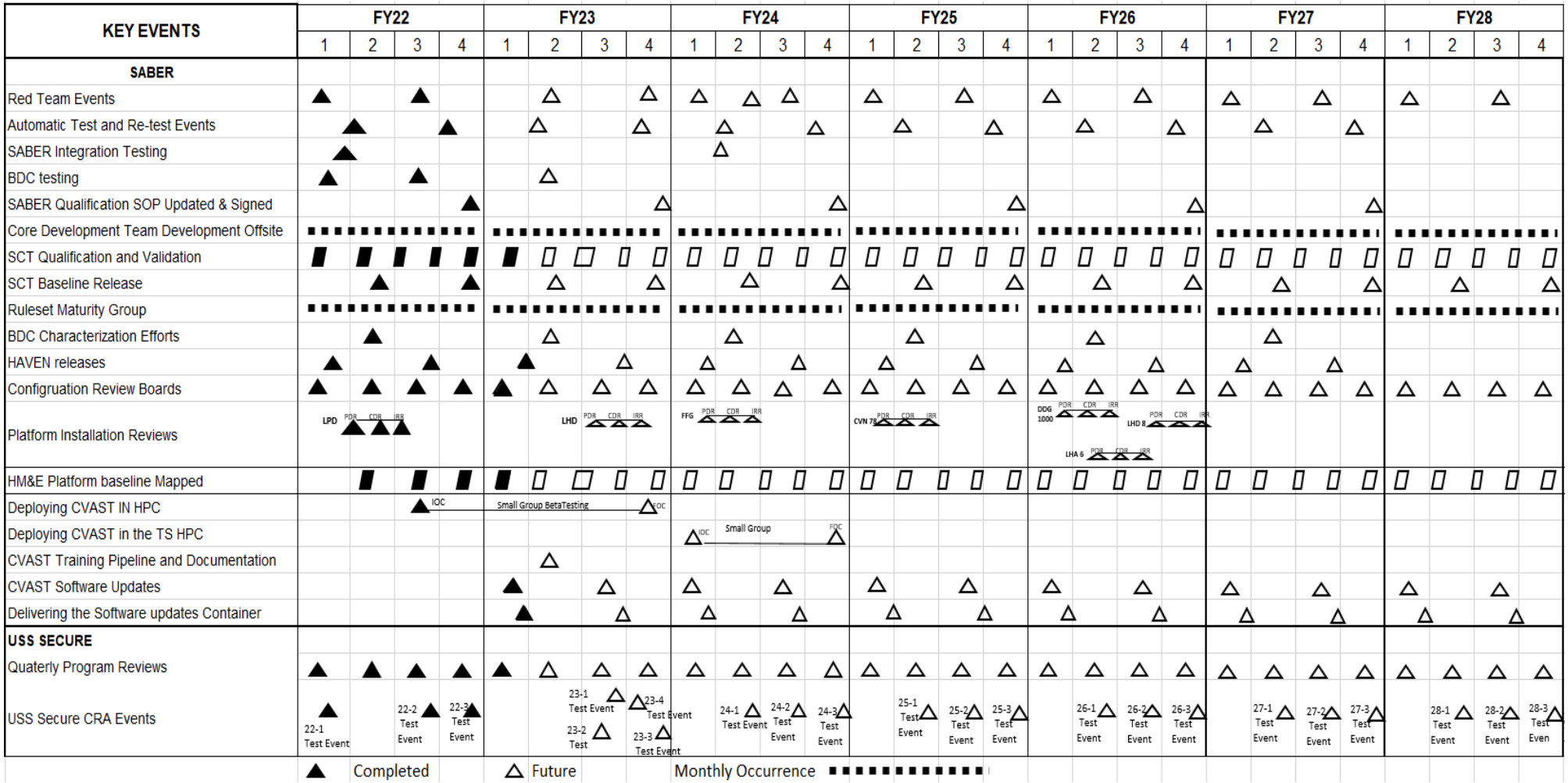


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3244 / *Cybersecurity Engineering*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3244				
SABER: Red Team Events	1	2022	3	2028
SABER: Automatic Test and Re-test Events	1	2022	4	2027
SABER: SABER Integration Testing	1	2022	2	2024
SABER: BDC testing	1	2022	2	2023
SABER: SABER Qualification SOP Updated & Signed	4	2022	4	2027
SABER: Core Development Team Development Offsite	1	2022	4	2028
SABER: SCT Qualification and Validation	1	2022	4	2028
SABER: SCT Baseline Release	2	2022	4	2028
SABER: Ruleset Maturity Group	1	2022	4	2028
SABER: BDC Characterization Efforts	2	2022	2	2027
SABER: HAVEN releases	1	2022	3	2027
SABER: Configruation Review Boards	1	2022	4	2028
SABER: Platform Installation Reviews	1	2022	4	2026
SABER: HM&E Platform baseline Mapped	2	2022	4	2028
SABER: Deploying CVAST in HBC	3	2022	4	2023
SABER: Deploying CVAST in the TS HBC	1	2024	4	2024
SABER: CVAST Training Pipeline and Documentation	2	2023	2	2023
SABER: CVAST Software Updates	1	2023	3	2028
SABER: Delivering the Software updates Container	1	2023	4	2028
USS SECURE: USS SECURE Quarterly Program Reviews	1	2022	4	2028
USS SECURE: USS SECURE CRA Events	1	2022	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603563N / *Ship Concept Advanced Design*	Project (Number/Name) 3376 / *Strategic Sealift*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3376: *Strategic Sealift*	29.545	8.759	7.166	6.134	-	6.134	4.696	4.201	4.268	4.255	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project 3376 - Strategic Sealift Research and Development - Develops new concepts and technologies which can be applied to or will enable future strategic sealift, and Seabasing systems. The technologies include ship configuration concepts, equipment to increase cargo handling and cargo loading/unloading rates (including commercial and merchant ship systems), improved man/machine interfaces, improved structural configurations and materials, and Logistics-Over-the-Shore (LOTS) equipment and system improvements.

Prior Years include: FY2016 and prior years (FY2014 and earlier) efforts financed under the National Defense Sealift Fund (NDSF) BA 04 Project 3116 Strategic Sealift Research and Development; FY2015, FY2017, FY2019 thru FY2022 efforts financed under this program element, RDT&E,N BA04, Project 3376 (Strategic Sealift); and FY2018 efforts financed under RDT&E,N BA 04 Project 9999/C403 (Congressional Adds).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Shipboard Crane Systems/Shipboard Cargo Systems	3.060	5.958	4.440	0.000	4.440
Articles:	-	-	-	-	-
FY 2023 Plans: Continue investigation and demonstration of shipboard crane/cargo system improvements including Vertical Launch System (VLS) Rearming and transfer capabilities. VLS rearming scope to include completion of fabrication and start of testing of intermodal container system for transportation of VLS missile canisters. Begin analysis and concept development for rearming of Naval Strike Missile. Begin analysis and concept development for T-AKE (dry cargo/ammunition ship) upgrades to enhance VLS and heavyweight torpedo rearming capabilities. Begin engineering design and development for VLS Strike Up/Strike Down System transition.					
FY 2024 Base Plans: Continue investigation and demonstration of shipboard crane/cargo system improvements including Vertical Launch System (VLS) Rearming and transfer capabilities. VLS rearming scope to include continuation of testing of intermodal container system for transportation of VLS missile canisters. Continue analysis and concept development for rearming of Naval Strike Missile. Continue concept development, and begin design and fabrication for T-AKE (dry cargo/ammunition ship) upgrades to enhance VLS and heavyweight torpedo rearming					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3376 / *Strategic Sealift*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
capabilities. Continue engineering design and development and begin fabrication for VLS Strike Up/Strike Down System transition. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Budget decrease of $1.518M reflects the schedule of the planned work for the T-AKE rearming project and VLS Strike Up/Strike Down system transition.					
Title: Sealift Concept Development ***Articles:*** ***FY 2023 Plans:*** Continue Sealift Research and Technology development and program guidance. Continue investigation of improved sealift vessel survivability. ***FY 2024 Base Plans:*** Continue Sealift Research and Technology development and program guidance. Continue investigation of improved sealift vessel survivability. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Budget increase of $461K reflects an increased level of effort for developing projected survivability performance and concepts for survivability improvements.	2.170 -	0.673 -	1.134 -	0.000 -	1.134 -
Title: Lighter/HSV Seabase to Shore Cargo Transfer ***Articles:*** ***FY 2023 Plans:*** N/A ***FY 2024 Base Plans:*** Development of Unmanned Surface Vessels (USV) logistics delivery system ***FY 2024 OCO Plans:***	2.966 -	0.000 -	0.560 -	0.000 -	0.560 -

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3376 / *Strategic Sealift*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Budget increase of $560K reflects the continuation of the Logistics USV Unmanned Delivery System Concept Development project after a pause in FY 2023.					
Title: Advanced Tools	0.563	0.535	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2023 Plans: Continue investigation and demonstration of individual and multi-ship motion measurement and prediction Environmental and Ship Motion Forecasting (ESMF) system to include installation and testing of the EPF 10. ***FY 2024 Base Plans:*** N/A ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Budget decrease of $535K reflects the completion of the Environmental and Ship Motion Forecasting (ESMF) project.					
Accomplishments/Planned Programs Subtotals	8.759	7.166	6.134	0.000	6.134

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable for SEALIFT R&D efforts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603563N / *Ship Concept Advanced Design*	Project (Number/Name) 3376 / *Strategic Sealift*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Shipboard Crane Systems/ Shipboard Cargo Systems	WR	Various Contractors : Various	11.969	3.060	Jan 2022	5.958	Jan 2023	4.440	Jan 2024	-		4.440	Continuing	Continuing	Continuing
Sealift Concept Development	WR	Various Contractors : Various	6.327	2.170	Jan 2022	0.673	Jan 2023	1.134	Jan 2024	-		1.134	Continuing	Continuing	Continuing
Lighter/HSV Seabase to Shore Cargo Transfer	WR	Various Contractors : Various	7.376	2.966	Jan 2022	0.000		0.560	Jan 2024	-		0.560	Continuing	Continuing	Continuing
Advanced Tools	WR	Various : Various	3.873	0.563	Jan 2022	0.535	Jan 2023	0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	29.545	8.759		7.166		6.134		-		6.134	Continuing	Continuing	N/A

Remarks

1. Prior Years column only includes FY2015 and FY2017 (project 3376); FY2018 Congressional Add (project C403; and FY2019-FY2022 (project 3376) funding as FY2016 and prior years (FY14 and earlier) were funded under NDSF BA 04 Project 3116 Strategic Sealift Research and Development.
2. Award dates reflect initial award of incremental execution.

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	29.545	8.759		7.166		6.134		-		6.134	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3376 / *Strategic Sealift*

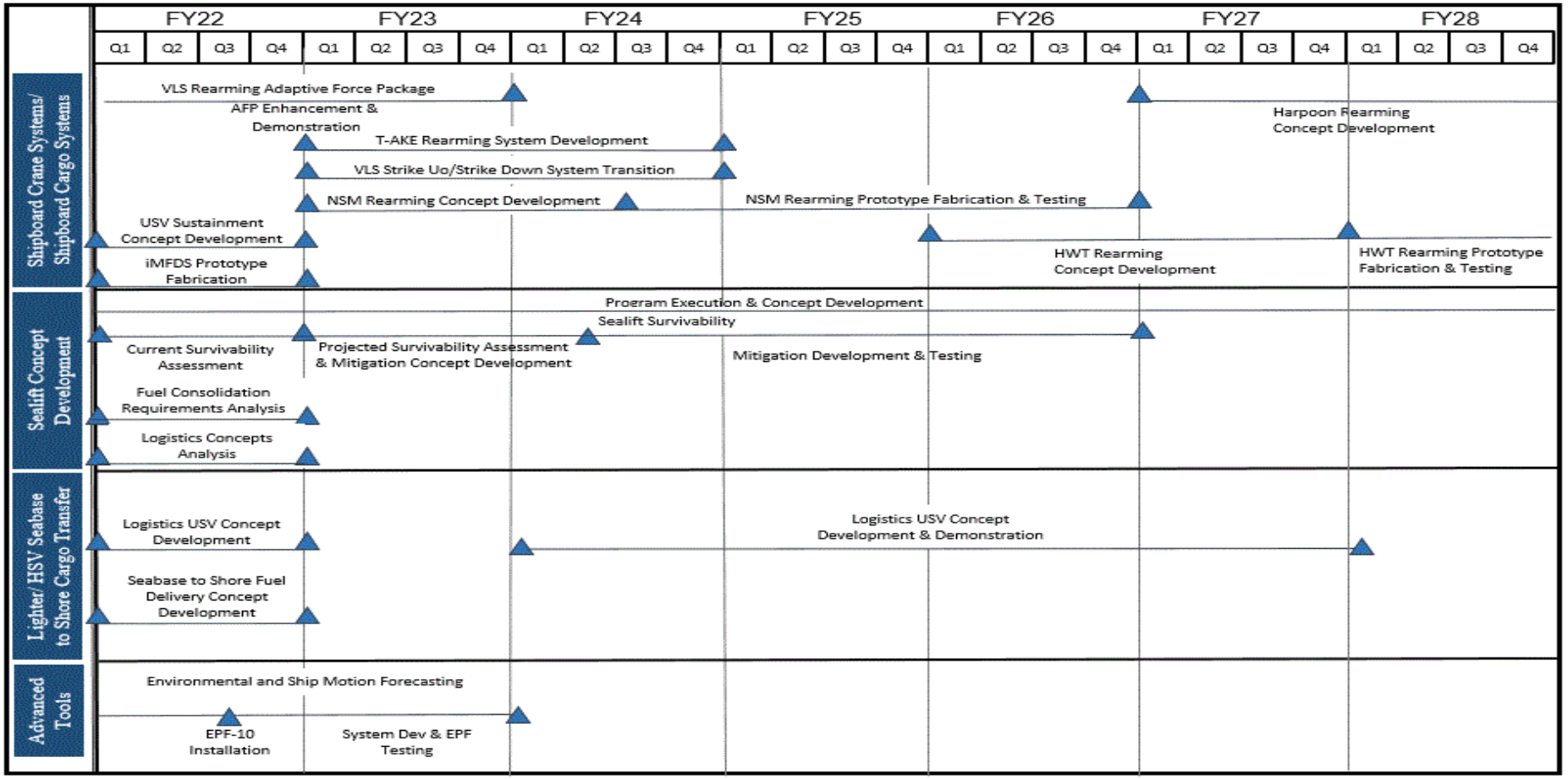


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3376 / *Strategic Sealift*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3376				
Shipboard Crane Systems/Shipboard Cargo Systems	1	2022	4	2028
Sealift Concept Development	1	2022	4	2028
Lighter/HSV Seabase to Shore Cargo Transfer	1	2022	4	2022
Lighter/HSV Seabase to Shore Cargo Transfer FY24-FY28	1	2024	1	2028
Advanced Tools	1	2022	1	2024

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603563N / *Ship Concept Advanced Design*	Project (Number/Name) 3505 / *Maritime Prepositioning Force Next*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
3505: *Maritime Prepositioning Force Next*	0.000	0.000	0.000	1.502	-	1.502	1.503	2.539	16.485	2.485	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

This project is a new start in FY 2024.

A. Mission Description and Budget Item Justification

The MPF(X) ships will recapitalize the aging BOBO Class maritime prepositioning ships. The 'Sealift the Nation Needs' report to Congress defines a three-phase Sealift Recapitalization approach: Service Life Extensions, Acquiring Used ships, and new construction. The MPF(X) portion represents the prepositioning new construction aspect of the three-phase sealift recapitalization approach. USNS BOBO class ships will retire from service beginning in FY 2033. Approval of an Initial Capabilities Document (ICD), and the early efforts of an Analysis of Alternatives (AoA) are planned beginning in FY2024.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Maritime Prepositioning Force Next Design and Integration	0.000	0.000	1.502	0.000	1.502
Articles:	-	-	-	-	-
FY 2023 Plans: N/A					
FY 2024 Base Plans: FY 2024 funds will be used to fund development and approval of an Initial Capabilities Document (ICD). ICD efforts will include identification of applicable gaps associated with operational risk across the joint force that the MPF(X) program is intended to fill, and proposal of materiel and/or non-materiel approaches that will be further studied in the Analysis of Alternatives (AoA). Early pre-AoA efforts to be completed by Warfare Centers and various Support Contractors are planned to begin in late FY 2024.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: MPF(X) Program Initiation efforts will begin in FY 2024.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	1.502	0.000	1.502

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3505 / *Maritime Prepositioning Force Next*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Preliminary Design is contemplated to be completed by multiple industry partners. The acquisition strategy for the Detail Design & Construction efforts will be developed in the future.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3505 / *Maritime Prepositioning Force Next*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Initial Capability Document (ICD)	C/BA	Various : Various	0.000	0.000		0.000		0.500	Oct 2023	-		0.500	0.000	0.500	-
		Subtotal	0.000	0.000		0.000		0.500		-		0.500	0.000	0.500	N/A

Remarks

1. Award dates reflect initial award of incremental execution.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM & Engineering Support	C/BA	Variou : Various	0.000	0.000		0.000		0.301	Oct 2023	-		0.301	Continuing	Continuing	Continuing
Warfare Center Analysis and Support	C/BA	Various : Various	0.000	0.000		0.000		0.701	Oct 2023	-		0.701	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		1.002		-		1.002	Continuing	Continuing	N/A

Remarks

1. Award dates reflect initial award of incremental execution.

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		1.502		-		1.502	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3505 / *Maritime Prepositioning Force Next*

MPF(X) Notional Schedule

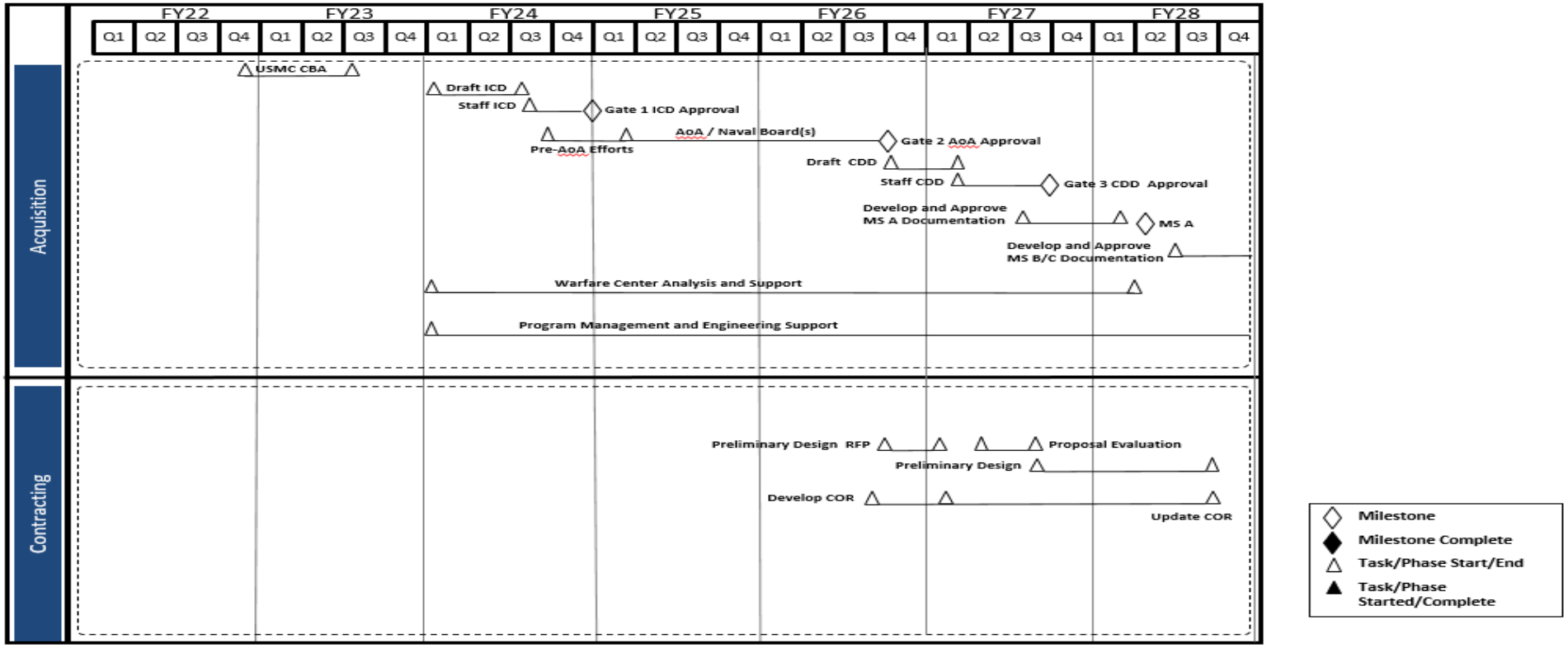


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 3505 / *Maritime Prepositioning Force Next*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3505				
Draft ICD	1	2024	4	2024
Gate 1 ICD Approval	4	2024	4	2024
AoA	3	2024	4	2026
Gate 2 AoA Approval	4	2026	4	2026
CDD Development	3	2026	3	2027
Gate 3 CDD Approval	3	2027	3	2027
MS A	2	2028	2	2028
Preliminary Design	3	2027	3	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603563N / *Ship Concept Advanced Design*	Project (Number/Name) 4044 / *Medium Landing Ship*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
4044: *Medium Landing Ship*	20.030	12.667	12.167	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	44.864
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Starting in FY2024, RDT&E requirements are detailed in PE 0603564N/Ship Preliminary Design & Feasibility Studies. PE changed to better align with scope of work for the program. Project Title updated from Next Generation Medium Amphibious Ship to Medium Landing Ship.

A. Mission Description and Budget Item Justification

The Light Amphibious Warship (LAW) will be referred to as the Medium Landing Ship (LSM) going forward to align with the mission and distinguish between traditional amphibious ships. LSM is a medium-sized landing ship that enables distributed maneuver and logistics such as Distributed Maritime Operations (DMO), Littoral Operations in a Contested Environment (LOCE), and Expeditionary Advanced Base Operations (EABO) in support of the newly established Marine Littoral Regiment (MLR). It is designed to fill the gap in capability between the Navy's large, multipurpose amphibious warfare class ships and smaller landing vessels. This ship will deploy tailored logistics, select power projection and strike capabilities.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Medium Landing Ship	12.667	12.167	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2023 Plans: Following the conclusion of PD, the program will utilize the Special Studies Options under the previously awarded contracts with the five industry partners to conduct sensitivity analysis and mature the designs to help inform the Request for Proposal (RFP) for Detail Design and Construction (DD&C). FY2023 efforts will focus on maturing the circular of requirements and development of the Command, Control, Communications, Computers, and Intelligence (C4I) systems and shipboard network. Continue Government Furnished Equipment (GFE) development efforts to ensure full ship integration. Tasks include Engineering, Logistics, Program Management, and Test and Evaluation support. Engineering efforts in FY2023 develop the technical documentation required for the Navy's Gate Program Reviews. Logistics tasks continue in training development, informal Integrated Logistics Assessment (ILA) execution, advance planning for Homeport 1, operations and sustainment cost modeling development, and analysis for reliability, availability, and maintainability of the ship. Development and submission of Preliminary Ship's					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 4044 / *Medium Landing Ship*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Manning Document (PSMD) and Manpower Estimate Report (MER). Program Management support continues for development of the statutory and regulatory required program Milestone documentation to support upcoming Navy Gate Program Reviews as well as the development of the DD&C RFP. Test and Evaluation support continues the development of the Test and Evaluation Master Plan (TEMP) and participation in Marine Corps Warfighting Lab (MCWL) Offshore Support Vessel experimentation efforts to reduce risk and prove out the concept of employment. ***FY 2024 Base Plans:*** FY2024 Plans aligned under PE 0603564N, Ship Preliminary Design and Feasibility Studies to better align with the scope of the program. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease of $12.167M from FY2023 to FY2024 is due to FY2024 RDT&E requirements being moved PE 0603564N/Ship Preliminary Design & Feasibility Studies.					
Accomplishments/Planned Programs Subtotals	12.667	12.167	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• 3050: *Medium Landing Ship*	0.000	0.000	0.000	-	0.000	187.928	150.144	297.024	296.196	0.000	931.292
• 0603564N: *Medium Landing Ship*	0.000	0.000	14.749	-	14.749	7.500	6.978	7.074	7.215	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Navy awarded the Concept Study /Preliminary Design contracts on 14 June 2021. Concept Studies completed in October 2021 and Preliminary Design options were exercised January 2022. The Detail Design and Construction award is planned for FY2025. This will allow the program to continue maturation of the design.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 4044 / *Medium Landing Ship*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Concept Studies/ Preliminary Design/ Sensitivity Analysis	TBD	Various : Various	12.194	6.693	Jan 2022	1.607	Dec 2022	0.000		-		0.000	0.000	20.494	Continuing
		Subtotal	12.194	6.693		1.607		0.000		-		0.000	0.000	20.494	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	TBD	Various : Various	4.947	1.897	Nov 2021	8.042	Nov 2022	0.000		-		0.000	0.000	14.886	Continuing
Logistics Support	TBD	Various : Various	1.874	3.106	Nov 2021	0.292	Nov 2022	0.000		-		0.000	0.000	5.272	Continuing
Program Mgmt Support	TBD	Various : Various	0.507	0.757	Nov 2021	1.255	Nov 2022	0.000		-		0.000	0.000	2.519	Continuing
		Subtotal	7.328	5.760		9.589		0.000		-		0.000	0.000	22.677	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	TBD	Various : Various	0.508	0.214	Nov 2021	0.971	Dec 2022	0.000		-		0.000	0.000	1.693	Continuing
		Subtotal	0.508	0.214		0.971		0.000		-		0.000	0.000	1.693	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	20.030	12.667		12.167		0.000		-		0.000	0.000	44.864	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 4044 / *Medium Landing Ship*

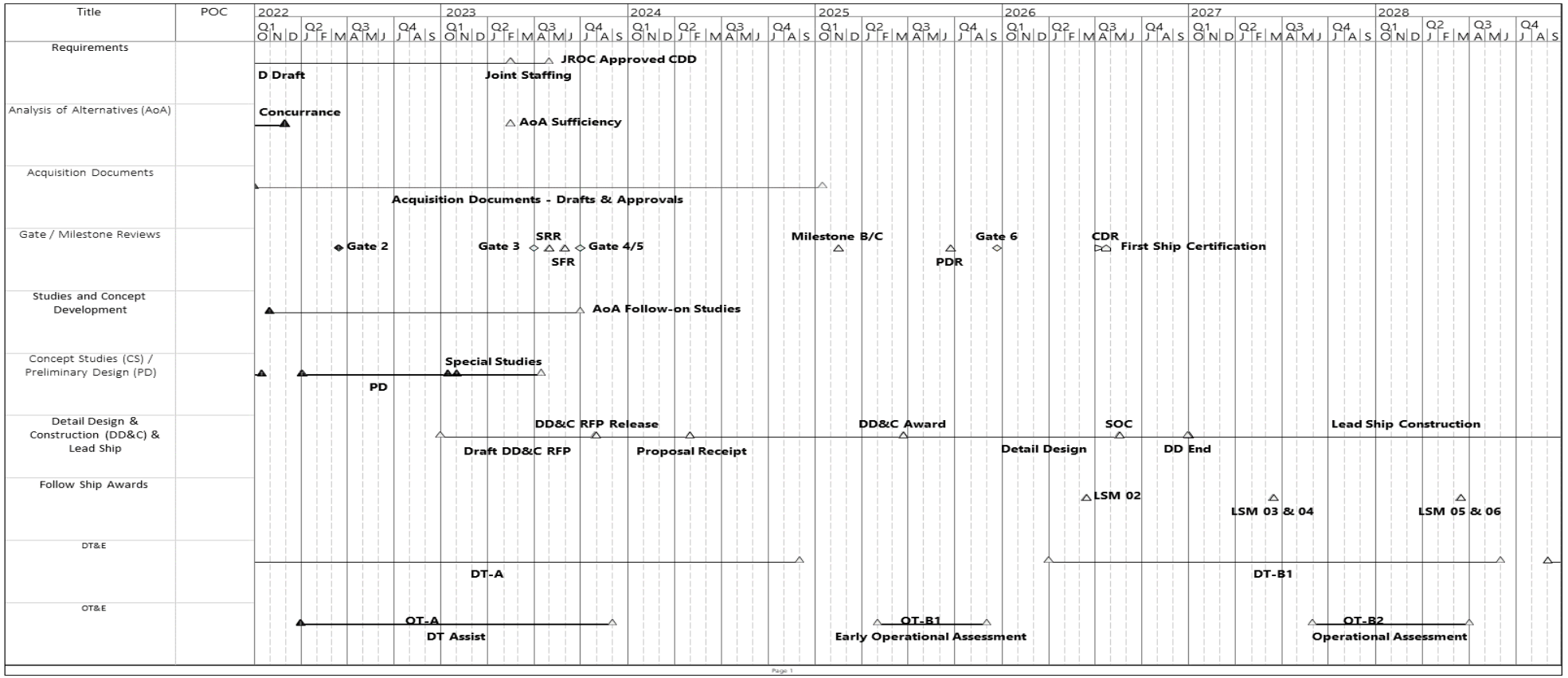


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 4044 / *Medium Landing Ship*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4044				
Capability Development Document	1	2022	3	2023
Analysis of Alternatives Sufficiency Review	2	2022	2	2023
Gate 2	2	2022	2	2022
Preliminary Design	2	2022	4	2022
Gate 3	2	2023	3	2023
Gate 4/5	3	2023	4	2023
Combined Milestone B/C	1	2025	1	2025
Detail Design & Construction Award	2	2025	2	2025
Start of Construction for Lead Ship	3	2026	3	2026

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603563N / *Ship Concept Advanced Design*	Project (Number/Name) 4045 / *Next Generation Medium Logistics Ship*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
4045: *Next Generation Medium Logistics Ship*	19.978	20.384	2.959	8.810	-	8.810	7.737	2.149	1.472	1.855	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Next Generation Logistics Ship (NGLS) is planned to be a new class of ships to augment the traditional Combat Logistics Force (CLF) to enable refueling, rearming, and resupply of Naval assets - afloat and ashore - near contested environments via ship-to-ship operations and ship-to port operations in support of Distributed Maritime Operations (DMO), Littoral Operations in a Contested Environment (LOCE), and Expeditionary Advanced Base Operations (EABO). Augmenting the traditional CLF, NGLS will provide a flexible, responsive platform to move fuel, personnel, equipment, and supplies between ships, advanced bases, ports, and dispersed nodes of the seabase; sustaining afloat (Surface Action Group) and ashore (Expeditionary Advanced Base) requirements. RDT&E funding will continue to support development of the NGLS ship design(s), specification development, affordability analyses, and definition of ship mission systems leading to Detail Design & Construction award of the lead ship in FY 2026.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Next Generation Logistics Ship	20.384	2.959	8.810	0.000	8.810
Articles:	-	-	-	-	-
FY 2023 Plans: FY 2023 funds will be used to support the AoA efforts and design maturation, and release of the Preliminary Design Request for Proposals (RFP).					
FY 2024 Base Plans: FY 2024 funds will be used to support the award of Preliminary Design contracts, finalizing the CDD, development of the Test Evaluation Management Plan (TEMP) and execution of Program Management and Engineering Support efforts. Award Preliminary Design contracts.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Increase of $5.851 million is primarily due to the award of Preliminary Design contracts, along with development of the NGLS Test and Evaluation Master Plan (TEMP).					
Accomplishments/Planned Programs Subtotals	20.384	2.959	8.810	0.000	8.810

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 4045 / *Next Generation Medium Logistics Ship*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Preliminary Design efforts will be performed by several industry partners. The acquisition strategy for the future Detail Design & Construction efforts will be developed during FY 2024.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 4045 / *Next Generation Medium Logistics Ship*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Industry Studies & Design	Various	Various : Various	6.000	2.500	Sep 2022	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Preliminary Design	Various	Various : Various	0.000	0.000		0.000		4.000	Dec 2023	-		4.000	0.000	4.000	-
Indicative Design	C/BA	NSWC CD : Maryland	2.500	2.500	May 2022	0.500	May 2023	0.000		-		0.000	0.000	5.500	-
Vessel Experimentation and Demonstration	C/BA	Various : Various	4.650	7.187	Sep 2022	0.000		0.000		-		0.000	0.000	11.837	-
		Subtotal	13.150	12.187		0.500		4.000		-		4.000	Continuing	Continuing	N/A

Remarks

Due to AoA delays, Preliminary Design contract awards have moved from August 2023 to December 2023.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM & Engineering Support	C/BA	CACI : Virginia	2.860	1.769	May 2022	1.119	Mar 2023	3.000	Jan 2024	-		3.000	Continuing	Continuing	Continuing
Special Studies	C/BA	Various : Not Specified	1.565	0.000		0.000		0.000		-		0.000	0.000	1.565	-
Warfare Center Analysis and Support	C/BA	Various WFC : Various WFC	1.378	1.581	May 2022	0.840	Mar 2023	0.000		-		0.000	0.000	3.799	-
AoA Support	C/BA	CACI/Systems Planning & Analysis : Virginia	1.025	4.847	May 2022	0.500	Apr 2023	0.000		-		0.000	0.000	6.372	-
		Subtotal	6.828	8.197		2.459		3.000		-		3.000	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/BA	Various : Various	0.000	0.000		0.000		1.810	Jan 2024	-		1.810	0.000	1.810	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 4045 / *Next Generation Medium Logistics Ship*

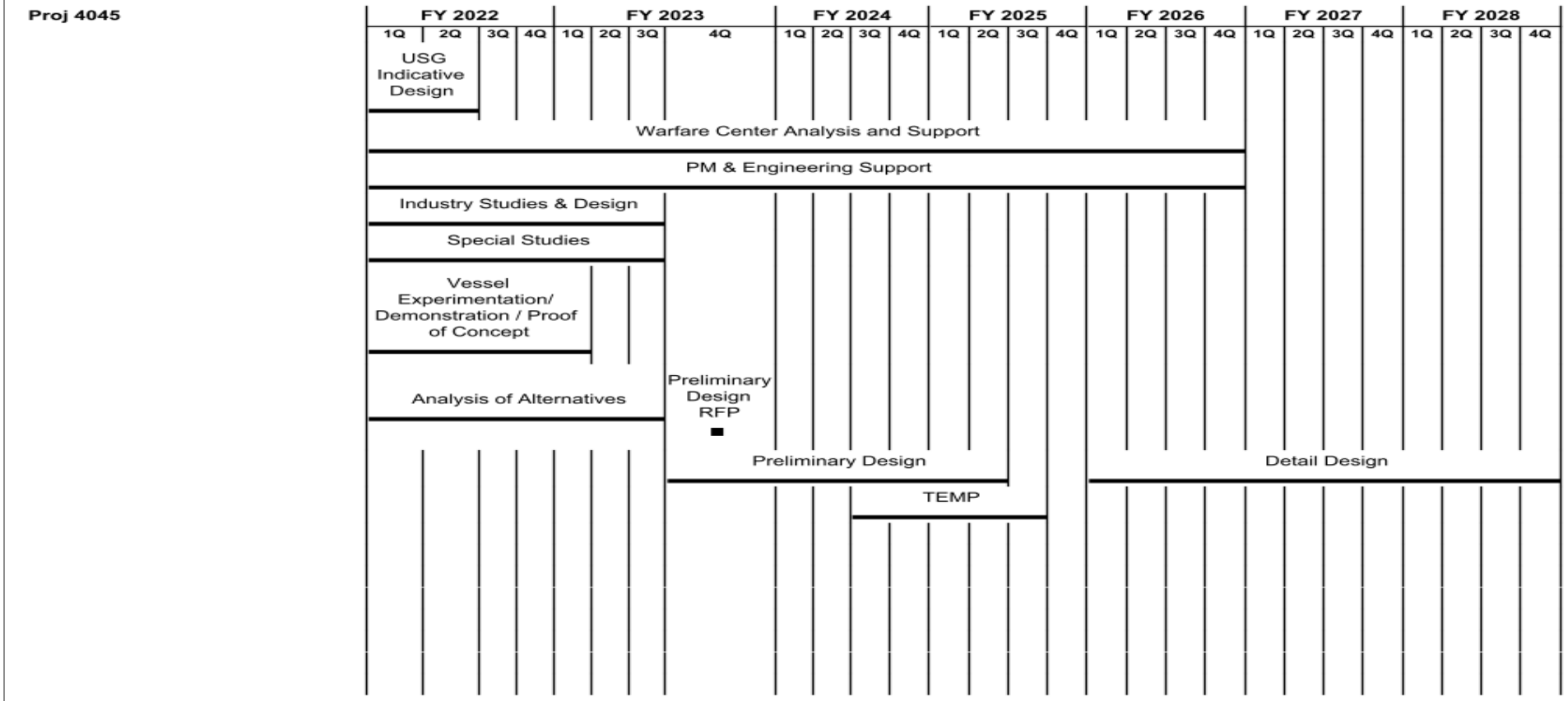
Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	0.000	0.000		0.000		1.810		-		1.810	0.000	1.810	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	19.978	20.384		2.959		8.810		-		8.810	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 4045 / *Next Generation Medium Logistics Ship*



2024PB - 0603563N - 4045

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 4045 / *Next Generation Medium Logistics Ship*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4045				
USG Indicative Design	1	2022	2	2022
Warfare Center Analysis and Support	1	2022	4	2026
Program Management & Engineering Support	1	2022	4	2026
Industry Studies & Design	1	2022	3	2023
Special Studies	1	2022	3	2023
Vessel Experimentation/ Demonstration / Proof of Concept	1	2022	1	2023
Analysis of Alternatives	1	2022	3	2023
Release Preliminary Design Request for Proposal (RFP)	4	2023	4	2023
Preliminary Design	4	2023	2	2025
Detail Design	1	2026	4	2028
Test and Evaluation Master Plan (TEMP)	3	2024	3	2025

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603563N / *Ship Concept Advanced Design*	Project (Number/Name) 5010 / *AS(X) Submarine Tender*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
5010: *AS(X) Submarine Tender*	0.000	15.781	15.466	10.565	-	10.565	5.050	4.028	0.000	0.000	0.000	50.890
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

AS(X) will conduct steady state and wartime sustained, forward-based tending, resupply, depot and intermediate level repair operations on submarines and ships while anchored or pier side. In steady state, AS(X) will provide pier side support in a forward deployed submarine homeport, providing sustained repair, supply, weapons handling, and tending operations for submarines.

AS(X) is being specifically designed to support deployed VIRGINIA class (VCS), COLUMBIA class (CLB) and future generation submarines in the 21st century. AS(X) is required to support all aspects of Intermediate level maintenance and support to deliver expeditionary tending operations to VCS block V (and later) submarines.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: AS(X) Submarine Tender Design and Total Ship Integration	15.781	15.466	10.565	0.000	10.565
Articles:	-	-	-	-	-
FY 2023 Plans: Continue AS(X) Program development efforts, including exercising the Design Maturation option CLIN on PD contract and continued development of acquisition documentation to support Gate 4/5 and Milestone B/C including: Reliability, Availability, Maintainability, Cost (RAM-C) Rationale Report, Program Protection Plan (PPP) with Cybersecurity Strategy, Life Cycle Sustainment Plan (LCSP), Diminishing Manufacturing Plan (DMP), Item Unique Identification (IUID) Plan, Core Logistics Determination, Systems Engineering Plan (SEP), Information Support Plan (ISP), Navy Training Systems Plan (NTSP), Preliminary Ships Manning Document (PMSD), System Safety Management Plan, Programmatic Environmental Safety and Occupational Health Evaluation (PESHE), Cost Position, Design Reviews, and more. Additional efforts include the development of the AS(X) System Specification, with the Nuclear Support Facility (NSF) Specification included, and DD&C RFP development efforts supporting release of the AS(X) DD&C RFP.					
FY 2024 Base Plans: FY24 will continue with AS(X) Program development efforts including continued development and refinement of acquisition documentation to support Milestone B/C. Additional efforts include award of the DD&C Contract as well as establishment of the Government oversight team.					
FY 2024 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 5010 / *AS(X) Submarine Tender*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Budget decrease of $4.901M reflects planned AS(X) DD&C Award and Receipt of FY 2024 SCN funds.					
Accomplishments/Planned Programs Subtotals	15.781	15.466	10.565	0.000	10.565

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The AS(X) Program pursued full and open competition to award three Preliminary Design Contracts, and is using a streamlined tailored acquisition approach with Acquisition Category (ACAT) II designation with tailoring of acquisition required documentation to support the FY 2022-2023 PD contract and FY 2023 Acquisition Documentation, Detail Design and Construction (DD&C) RFP and specification development based on PD. The program will be a single step to full capability, competitive contract, recapitalizing the existing 2 Submarine Tenders, and not an incremental procurement. AS(X) source selection, Preliminary Design contracts in FY 2022-2023 will aid in the development and finalization of the ship specification, Nuclear Support Facility (NSF) Interface Control Document (which will then be used to finalize the NSF specification), ship cost estimate, and detailed design and ship construction schedule. FY 2023 will focus on the DD&C contract solicitation and integrated Future Afloat Logistics Force (FALF) support for force logistics function of the sub tender.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603563N / *Ship Concept Advanced Design*	Project (Number/Name) 5010 / *AS(X) Submarine Tender*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Submarine Tender Design Maturation (PD)	Various	Various : Various	0.000	9.000	Apr 2022	9.000	Jan 2023	0.000		-		0.000	0.000	18.000	-
		Subtotal	0.000	9.000		9.000		0.000		-		0.000	0.000	18.000	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program and Engineering Support	Various	Various : Various	0.000	2.600	Jan 2022	3.600	Jan 2023	5.737	Jan 2024	-		5.737	0.000	11.937	-
		Subtotal	0.000	2.600		3.600		5.737		-		5.737	0.000	11.937	N/A

Remarks

1. Award dates reflect initial award of incremental execution.
2. $2.1M increase from FY 2023 to FY 2024 is to support evaluation and award of DD&C Contract and establishment of Government oversight team.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	Various	Various : Various	0.000	0.090	Jan 2022	0.030	Jan 2023	0.248	Jan 2024	-		0.248	0.000	0.368	-
		Subtotal	0.000	0.090		0.030		0.248		-		0.248	0.000	0.368	N/A

Remarks

1. Award dates reflect initial award of incremental execution.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 5010 / *AS(X) Submarine Tender*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Document Development	Various	Various : Various	0.000	4.091	Jan 2022	2.836	Jan 2023	4.580	Jan 2024	-		4.580	0.000	11.507	-
		Subtotal	0.000	4.091		2.836		4.580		-		4.580	0.000	11.507	N/A

Remarks

1. Award dates reflect initial award of incremental execution.
2. $1.7M increase from FY 2023 to FY 2024 is to support documentation development to support Milestone B/C and DD&C Award.

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	15.781		15.466		10.565		-		10.565	0.000	41.812	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 5010 / *AS(X) Submarine Tender*

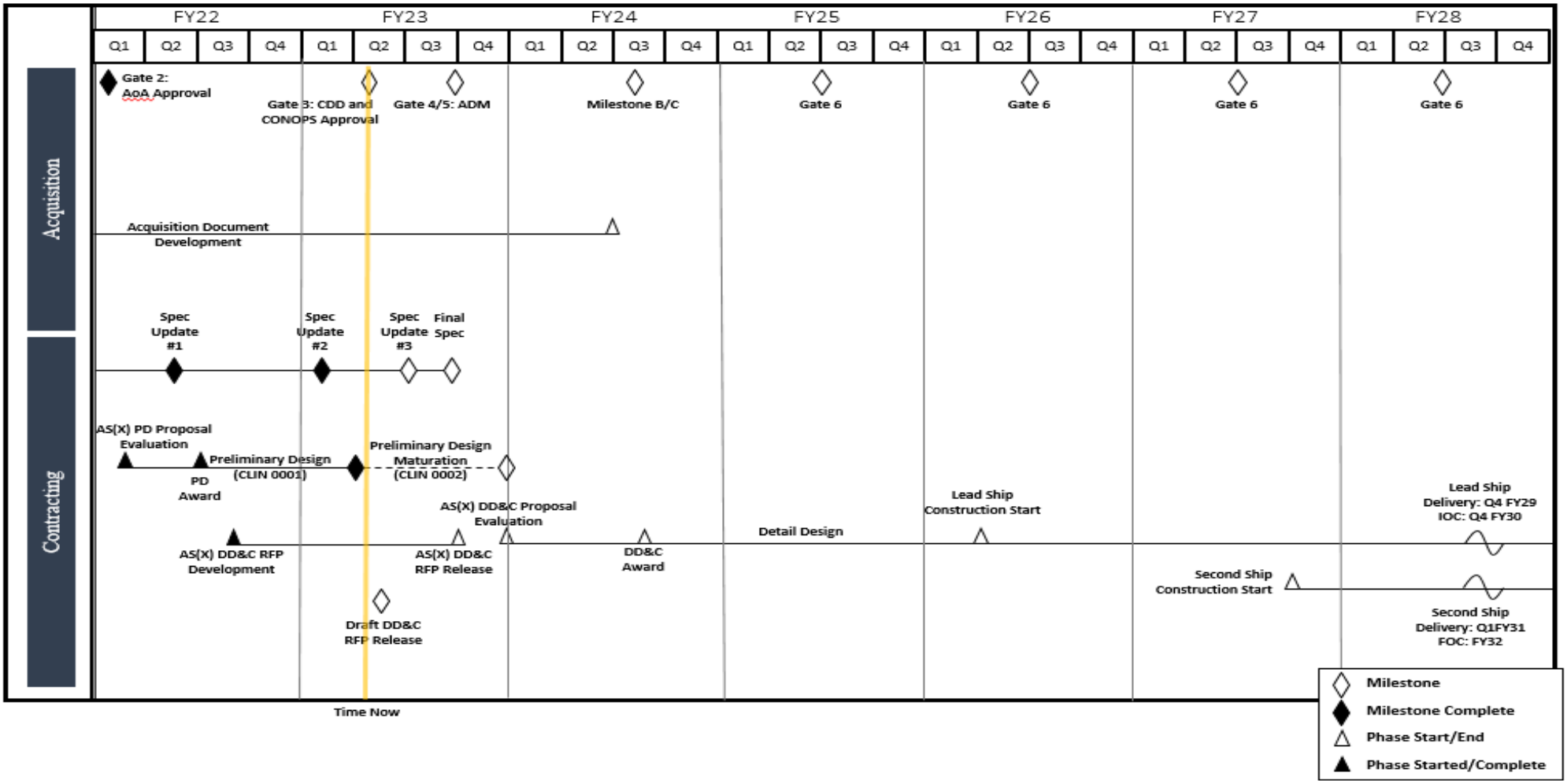


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 5010 / *AS(X) Submarine Tender*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 5010				
Submarine Tender and NSF Specification Development	1	2022	3	2023
Submarine Tender Acquisition Documentation	1	2022	3	2024
Preliminary Design Award	3	2022	3	2022
Submarine Tender DD&C RFP Development	3	2022	3	2023
CDD and CONOPS Approval	4	2022	4	2022
Submarine Tender Preliminary Design Maturation/Special Studies	3	2022	1	2024
Submarine Tender DD&C RFP Release	3	2023	3	2023
Award DDC contract	3	2024	3	2024

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603563N / *Ship Concept Advanced Design*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: *Congressional Adds*	43.413	30.871	48.200	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	122.484
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project C545 - Marine Energy Systems for Sensors and Microgrids
Funding provided in the Department of Defense Appropriations Act, 2023. Funding will continue maturation of Polymorphic Build Farms (PBFs) for distribution of polymorphic operating systems for DoD use. This includes the engineering, set up, delivery, implementation, and support for GovCloud PBFs. The build farm includes technologies such as the Point in Time Cache that allows for faithful and accurate builds of operating systems, both current and legacy/end-of-life. This includes the ability to lock down a specific version and configuration if needed for compliance/accreditation etc. The PBF will provide complete, end-to-end source code with the ability to create and update those operating systems as needed. The build out of PBFs facilitates the critical distribution of software to the fleet by providing scalability, redundancy and ensures availability of resources.

Project C580 - High-pressure Cold Spray System
Funding provided in the Department of Defense Appropriations Act, 2022. Funding will be applied to conduct research, development, and prototyping for high-pressure cold spray systems. Sustainment drives significant lifecycle costs to ships and submarines. The utilization of high-pressure cold spray systems for ship and submarine sustainment, including maintenance and repairs can result in significant efficiencies and cost savings for the Navy.

Project C602 - Defense Industrial Skills and Technology Training
Funding provided in the Department of Defense Appropriations Act, 2023. The Defense Industrial Skills and Technology Training (DISTT) program focuses on forging a next generation industrial workforce to improve the resiliency, lethality and availability of defense assets.
Work includes: Increasing expertise to improve operational efficiency; modernization and alignment of traditional trade work and work settings to meet operational mission requirements; and synergy between organic and defense industry partners to improve national industrial efficiencies resulting in faster fielding of new capabilities at scale

Project C634 - Polymorphic Build Farm for Open-Source Technologies
Funding provided in the Department of Defense Appropriations Act, 2022. Funding will establish two Polymorphic Build Farms (PBFs) for distribution of polymorphic operating systems for NAVSEA use. This includes the engineering, set up, delivery, implementation, and support for 2 GovCloud PBFs. The build farm includes technologies such as the Point in Time Cache that allows for faithful and accurate builds of operating systems, both current and legacy/end-of-life. This includes the ability to lock down a specific version and configuration if needed for compliance/accreditation etc. This project will adapt Polyverse's PBF technologies to the unique environments needed by NAVSEA. The PBF will provide complete, end-to-end source code with the ability to create and update those operating systems as needed. The build out of 2 PBFs facilitates the critical distribution of software to the fleet by providing scalability, redundancy and ensures availability of resources.

Project C752 - Metallic Additive Manufacturing

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 9999 / *Congressional Adds*

Funding provided in the Department of Defense Appropriations Act, 2022 and 2023. Funding will support additive manufacturing of metal parts using 3D printers, which are used to support the needs of the U.S. Navy Fleet.

Project C753 - Critical Protection Technology for Cybersecurity Engineering
Funding provided in the Department of Defense Appropriations Act, 2022 and 2023. Funding will support programs with a controlled resilient supply chain Anti-Tamper solution that enhances current cybersecurity protection measures and provides a value-added extension to the technologies at the enclave core.

Project C871 - Digital Maintenance Advisor for Shipboard Readiness
Funding provided in the Department of Defense Appropriations Act, 2023. Funding enables Naval Sea Systems Command (NAVSEA) to demonstrate the "Digital Maintenance Advisor" artificial intelligence platform that analyzes data on the maintenance and health of shipboard assets in the Navy, improving military readiness, predicting and diagnosing issues before they occur, and lowering maintenance costs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023
Congressional Add: Marine energy systems for sensors and microgrids ***FY 2022 Accomplishments:*** N/A ***FY 2023 Plans:*** Continue maturation of software and hosting environment foundation to harden operating systems for cybersecurity resiliency to defend against sophisticated threats including nation state actors. Continue to develop and deploy technologies that enhance comprehensive platform cybersecurity capabilities. Continue exploration for hardening defense weapon systems for cybersecurity resiliency. Explore programs across Department of Navy for early adoption, e.g., Situational Awareness, Boundary Enforcement and Response (SABER) and Integrated Combat Systems.	0.000	15.000
Congressional Add: High pressure cold spray system ***FY 2022 Accomplishments:*** The High-Pressure Cold Spray Systems Congressional Add will conduct research, development, and prototyping for high-pressure cold spray systems. Sustainment drives significant lifecycle costs to ships and submarines. The utilization of high-pressure cold spray systems for ship and submarine sustainment, including maintenance and repairs, can result in significant efficiencies and cost savings for the Navy. ***FY 2023 Plans:*** N/A	9.647	0.000
Congressional Add: Defense industrial Skills and Technology Training	0.000	10.000

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023
FY 2022 Accomplishments: N/A ***FY 2023 Plans:*** FY 2023 Plans Develop tools, actions and tactics to understand the gaps between current and required future state. Validate observations through interactive fielding exercises, to learn, adjust and then establish requirements for DISTT that can be scaled.		
Congressional Add: Polymorphic Build Farm for Open Source Technologies ***FY 2022 Accomplishments:*** Transition both Commercial instances of the PBF into the IL5 and IL6 NAVSEA Cloud environment. Mature the DevSecOp PBF environment to include Polyscripting, MANTID and VIRSEC Software packages. ***FY 2023 Plans:*** Establish SABER/HAVEN as the first Software inherited into the DevSecOp process to develop the Zero Trust process.	9.647	0.000
Congressional Add: Metallic additive manufacturing ***FY 2022 Accomplishments:*** Additive manufacturing of metal parts using 3D printers, which are used to support the needs of the U.S. Navy Fleet. ***FY 2023 Plans:*** AM efforts will focus on the development of advanced designs for valves and air elements for submarine applications. Efforts will also focus on qualification of vendors to additively manufacture parts for Navy to expand the defense industrial base.	4.824	4.000
Congressional Add: Critical protection technology for cybersecurity engineering ***FY 2022 Accomplishments:*** Conduct Non-recurring Engineering (NRE) in support of Software and hardware development of Keystone for Preliminary Design Reviews (PDR) and Critical Design Reviews (CDR). ***FY 2023 Plans:*** Complete Non-recurring Engineering (NRE) for Preliminary Design Reviews (PDR) and Critical Design Reviews (CDR). Deliver PDR and CDR packages. Complete software/hardware demonstrations and deliver Demonstration Report. Start Test and Evaluation (T&E) of Keystone.	6.753	11.700
Congressional Add: Digital maintenance advisor for shipboard readiness ***FY 2022 Accomplishments:*** N/A ***FY 2023 Plans:*** To research, develop, test, and demonstrate the "Digital Maintenance Advisor" artificial intelligence platform that analyzes data on the maintenance and health of shipboard assets in the Navy,	0.000	7.500

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023
improving military readiness, predicting and diagnosing issues before they occur, and lowering maintenance costs.		
Congressional Adds Subtotals	30.871	48.200

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603563N / *Ship Concept Advanced Design*	Project (Number/Name) 9999 / *Congressional Adds*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Manufacturing of Critical Scale Materials	TBD	Various : Various	0.988	0.000		0.000		0.000		-		0.000	0.000	0.988	-
Battery Prototype	TBD	Various : Various	1.482	0.000		0.000		0.000		-		0.000	0.000	1.482	-
C602 Defense Inudstrial Skills	MIPR	Various : Various	7.400	0.000		7.000	Jun 2023	0.000		-		0.000	0.000	14.400	-
C439 Additive Manufacturing (AM)	MIPR	AFRL : WPAFB, OH	2.980	0.000		0.000		0.000		-		0.000	0.000	2.980	-
C439 Additive Manufacturing (AM)	WR	NSWC CD : Bethesda, MD	1.820	0.000		0.000		0.000		-		0.000	0.000	1.820	-
C439 Additive Manufacturing (AM)	WR	NSWC : Various	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
C439 Additive Manufacturing (AM)	C/CPFF	Contracts : Various	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
C580 - Cold Spray	MIPR	ARMY : Various	1.342	1.500	Jun 2023	0.000		0.000		-		0.000	0.000	2.842	-
C752 - Metallic Additive Manufacturing (AM)	MIPR	AFRL : WPAFB, OH	0.000	2.538	Sep 2022	2.000	Sep 2024	0.000		-		0.000	0.000	4.538	-
C634 - Polymorphic Build Farms	MIPR	GSA : Various	0.000	8.000	May 2022	0.000		0.000		-		0.000	0.000	8.000	-
C753 - Critical Protection Technology	MIPR	GSA : Various	0.000	5.000	May 2022	10.530	May 2023	0.000		-		0.000	0.000	15.530	-
C752 - Metallic Additive Manufacturing (AM)	WR	NSWC CD : Bethesda, MD	0.000	1.562	Aug 2022	1.500	Sep 2024	0.000		-		0.000	0.000	3.062	-
C545 - Marine Energy Systems for Sensors and Microgrids	MIPR	GSA : Various	0.000	0.000		10.500	May 2023	0.000		-		0.000	0.000	10.500	-
C545 - Marine Energy Systems for Sensors and Microgrids	WR	NSWC DD : Virginia	0.000	0.000		3.000	May 2023	0.000		-		0.000	0.000	3.000	-
C871 - Digital Maintenance Advisor for Shipboard Readiness	Various	Various : Various	0.000	0.000		7.500	Sep 2024	0.000		-		0.000	0.000	7.500	-
		Subtotal	16.012	18.600		42.030		0.000		-		0.000	0.000	76.642	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 9999 / *Congressional Adds*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
C602 - Program Management Support	WR	Various : Various	0.494	0.000		1.000	Sep 2023	0.000		-		0.000	0.000	1.494	-
C580 - Program Mgmt Support	TBD	Various : Various	0.000	0.500	Jan 2023	0.000		0.000		-		0.000	0.000	0.500	-
C752 - Metallic Additive Manufacturing (AM)	TBD	Various : Various	0.000	0.000		0.500	Sep 2024	0.000		-		0.000	0.000	0.500	-
C634 - Polymorphic Build Farms	WR	NSWC DD : NSWC DD	0.000	0.428	Oct 2022	0.000		0.000		-		0.000	0.000	0.428	-
C634 - Polymorphic Build Farms	C/CPFF	Various : Various	0.000	1.219	Sep 2022	0.000		0.000		-		0.000	0.000	1.219	-
C753 - Critical Protection Techonology	MIPR	Various : Various	0.000	1.653	Sep 2022	1.170	May 2023	0.000		-		0.000	0.000	2.823	-
C545 - Marine Energy Systems for Sensors and Microgrids	MIPR	GSA : Various	0.000	0.000		1.500	May 2023	0.000		-		0.000	0.000	1.500	-
		Subtotal	0.494	3.800		4.170		0.000		-		0.000	0.000	8.464	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	TBD	Various : Various	9.531	7.647	Jun 2023	0.000		0.000		-		0.000	0.000	17.178	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	TBD	Various : Various	1.976	0.000		0.000		0.000		-		0.000	0.000	1.976	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	MIPR	GSA : Various	13.400	0.000		0.000		0.000		-		0.000	0.000	13.400	-
		Subtotal	24.907	7.647		0.000		0.000		-		0.000	0.000	32.554	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603563N / *Ship Concept Advanced Design*	Project (Number/Name) 9999 / *Congressional Adds*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
C602 - Project Support	WR	Various : Various	2.000	0.000		2.000	Jul 2023	0.000		-		0.000	0.000	4.000	-
C752 - Metallic Additive Manufacturing (AM)	TBD	Various : Various	0.000	0.724	Sep 2023	0.000		0.000		-		0.000	0.000	0.724	-
C753 - Critical Protection Technology	WR	NSWC CD : Besthesda, MD	0.000	0.100	Oct 2022	0.000		0.000		-		0.000	0.000	0.100	-
		Subtotal	2.000	0.824		2.000		0.000		-		0.000	0.000	4.824	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	43.413	30.871		48.200		0.000		-		0.000	0.000	122.484	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 9999 / *Congressional Adds*

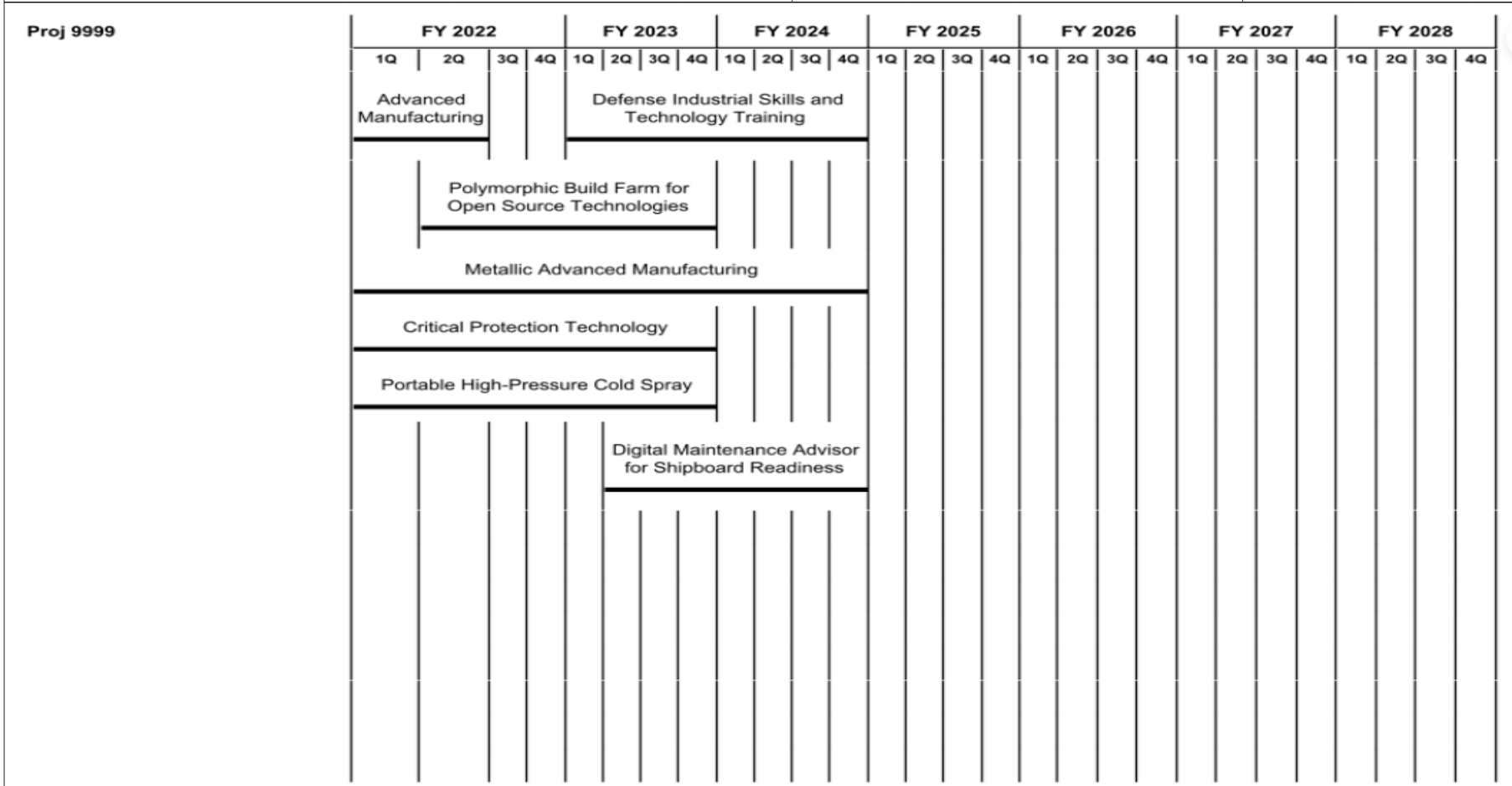


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603563N / *Ship Concept Advanced Design*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9999				
Advanced Manufacturing	1	2022	2	2022
Defense Industrial Skills and Technology Training	1	2023	4	2024
Polymorphic Build Farm for Open Source Technologies	2	2022	4	2023
Metallic Advanced Manufacturing	1	2022	4	2024
Critical Protection Technology	1	2022	4	2023
Portable High-Pressure Cold Spray	1	2022	4	2023
Digital Maintenance Advisor for Shipboard Readiness	2	2023	4	2024