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 0603564N *I Ship Prel Design & Feasibility Studies*							
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	102.468	39.472	75.305	121.402	-	121.402	65.756	108.695	55.611	53.402	Continuing	Continuing
0409: *DDG-51 Flt III Concept Development*	5.196	5.995	6.107	20.682	-	20.682	15.750	32.987	3.812	1.527	Continuing	Continuing
0411: *DDG(X) Concept Development*	12.439	8.297	49.745	74.050	-	74.050	38.186	64.334	40.305	41.116	Continuing	Continuing
3389: *OPLOG IPT Development*	74.833	20.356	19.453	11.921	-	11.921	4.320	4.396	4.420	3.544	Continuing	Continuing
4044: *Medium Landing Ship*	0.000	0.000	0.000	14.749	-	14.749	7.500	6.978	7.074	7.215	Continuing	Continuing
9999: *Congressional Adds*	10.000	4.824	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.824
Program MDAP/MAIS Code: **Project MDAP/MAIS Code(s):** 180												

Note

Project 3389 Prior years includes $11.319M FY 2018 funding financed under this PE project 9999/C404 (Congressional add).
Project 4044 Prior to FY24, RDT&E requirements were detailed in PE 0603563N/Ship Concept Advanced Design.
Project 4044 Title updated from Next Generation Medium Amphibious Ship to Medium Landing Ship

A. Mission Description and Budget Item Justification

0409 - This project provides Test and Evaluation (T&E) requirements for DDG-51 Flight III ships and efforts for the Navigation, Aviation and Hull, Mechanical & Electrical (HM&E) Cyber Enclaves Design for implementation on future new construction ships.

T&E will concentrate on verifying integration and interoperability of employed technologies and systems in the DDG-51 FLT III design to achieve the mission capabilities and performance requirements as defined in the DDG-51 Flight III Capability Development Document (CDD), with Initial Operational Capability (IOC) in FY24. T&E functions will include the evaluation of Critical Technical Parameters (CTP), Measures of Effectiveness (MOE), Measures of Suitability (MOS), and Key Performance Parameters (KPP). Funding is also planned for the execution of Developmental Testing (DT), Operational Testing (OT), Live Fire Test and Evaluation (LFT&E), and, beginning in FY24, efforts to support Full Ship Shock Trials (FSST).

The Navigation, Aviation and Hull, Mechanical & Electrical (HM&E) Cyber Enclaves Design effort will provide a new design to physically separate Hull, Mechanical, and Electrical (HM&E) communications from Navigation communications to meet multiple DoD Directives/Instructions on Cybersecurity and Navy Joint-SYSCOM Cybersecurity Standards on Enclave management. This design will be utilized to support implementation on future new construction DDG 51 class ships.

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 0603564N *I Ship Prel Design & Feasibility Studies*

0411 - The Navy's DDG(X) program is the Navy's Future Guided Missile Destroyer ship acquisition program to follow the DDG 51 class that is essential to field capabilities required for the future fight as validated by the Future Surface Combatant Force (FSCF) ICD, FSCF AoA, and Future Naval Force Study (FNFS). DDG(X) will integrate non-developmental systems into a new hull design that incorporates platform flexibility and the space, weight, power and cooling (SWAP-C) to meet future combatant force capability/system requirements that are not achievable without the new hull design. The DDG(X) platform will have the flexibility to rapidly and affordably upgrade to future warfighting systems when they become available as well as have improved range and fuel efficiency for increased operational flexibility and decreased demand on the logistics force. DDG(X) will provide an Integrated Power System(IPS) with flexibility to enable fielding of high demand electric weapons, sensor systems and computing resources. To decouple ship development risk from technology risk, accommodation of additional future capabilities will be pre-planned; these future capabilities may include: missile launchers capable of larger weapons to exceed adversary capabilities, high power lasers, or other systems that can be efficiently incorporated when developed and demonstrated.

3389 - Naval Operational Logistics (OPLOG) Integration IPT Development - Develops enabling technologies for future and in-service afloat operational logistics and integrated supply force and combatant logistics requirements; and conducts cooperative initiatives with acquisition programs, program sponsors, engineering managers, the Navy science and technology community and Fleet customers. OPLOG develops integrated, cross-platform (i.e. applicable to more than one ship class/type) operational logistics and energy conservation technologies and capabilities as well as draft acquisition and operations policy ensuring future Naval systems leverage emerging logistic capabilities and technologies to provide operationally effective and energy efficient logistics delivery.

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.

C754 - Congressional Add for the Preliminary Ship Design of Next-Gen Hospital Ship - The T-AH(X) Hospital ship program will recapitalize aging Role 3 medical services ships. The primary mission of these ships is to provide rapid, flexible, and mobile acute health services support to military personnel deployed ashore and afloat with a secondary mission of providing mobile surgical hospital service and acute medical care for disaster or humanitarian relief. USNS MERCY class ships will retire from service beginning in FY 2036, after over 60 years of service. Conduct of a Requirements Evaluation Team for development of Top Level Requirements and performance of initial ship feasibility studies is planned.

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 0603564N *I Ship Prel Design & Feasibility Studies*

B. Program Change Summary ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	40.774	75.327	119.213	-	119.213
Current President's Budget	39.472	75.305	121.402	-	121.402
Total Adjustments	-1.302	-0.022	2.189	-	2.189
• Congressional General Reductions	-	-0.022			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.302	0.000			
• Program Adjustments	0.000	0.000	1.247	-	1.247
• Rate/Misc Adjustments	0.000	0.000	0.942	-	0.942

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Project: 9999: *Congressional Adds*		
Congressional Add: *Preliminary ship design of next-gen hospital ship*	4.824	0.000
Congressional Add Subtotals for Project: 9999	4.824	0.000
Congressional Add Totals for all Projects	4.824	0.000

Change Summary Explanation

Project 0409: Funding increase supports the additional scope for Full Ship Shock Trials (FSST) planning, additional scope for the Cyber Enclaves design effort, and the increase in effort for the Flight III LFT&E program with the start of survivability testing drill development in FY 2024.

Project 0411: FY 2024 funding continues the design team ramp up to execute preliminary design activities and begin initial procurement of design information for select systems.

Project 3389: FY 2024 funding supports the materials procured for Seabased Petroleum Distribution System (SPDS) and improved Modular Fuel Delivery Station (iMFDS) fabrication.

Project 4044: FY 2024 increase due to realigning of project from PE 0603563N, Ship Concept Advanced Design, and funding required to support a lead ship in FY 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 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 0409 / *DDG-51 Flt III Concept Development*	

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
0409: *DDG-51 Flt III Concept Development*	5.196	5.995	6.107	20.682	-	20.682	15.750	32.987	3.812	1.527	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: 180

A. Mission Description and Budget Item Justification

This project provides Test and Evaluation (T&E) requirements for DDG-51 Flight III ships and efforts for the Navigation, Aviation and Hull, Mechanical & Electrical (HM&E) Cyber Enclaves Design for implementation on future new construction ships.

T&E will concentrate on verifying integration and interoperability of employed technologies and systems in the DDG-51 FLT III design to achieve the mission capabilities and performance requirements as defined in the DDG-51 Flight III Capability Development Document (CDD), with Initial Operational Capability (IOC) in FY24. T&E functions will include the evaluation of Critical Technical Parameters (CTP), Measures of Effectiveness (MOE), Measures of Suitability (MOS), and Key Performance Parameters (KPP). Funding is also planned for the execution of Developmental Testing (DT), Operational Testing (OT), Live Fire Test and Evaluation (LFT&E), and, beginning in FY24, efforts to support Full Ship Shock Trials (FSST).

The Navigation, Aviation and Hull, Mechanical & Electrical (HM&E) Cyber Enclaves Design effort will provide a new design to physically separate Hull, Mechanical, and Electrical (HM&E) communications from Navigation communications to meet multiple DoD Directives/Instructions on Cybersecurity and Navy Joint-SYSCOM Cybersecurity Standards on Enclave management. This design will be utilized to support implementation on future new construction DDG 51 class ships.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: DDG-51 Flight III Test and Evaluation	5.995	6.107	11.833	0.000	11.833
Articles:	-	-	-	-	-
FY 2023 Plans: Continue M&S efforts and model updates. Update threat models and tools as necessary to support Live Fire Test and Evaluation (LFT&E) survivability and vulnerability assessments. Integrate threat models and build Ship Infrared Model (IR). Conduct M&S runs for the record and conduct Verification, Validation and Accreditation of LFT&E models. Conduct cybersecurity developmental testing on DDG-51 FLT III to include Cooperative Vulnerability Identification (CVI) and Adversarial Cybersecurity DT Event (ACD).					
FY 2024 Base Plans: Continue M&S efforts and model updates. Complete M&S runs for the record and analysis, initiate test plan development for future Failure and Recovery Mode (FARM) testing, and generate an Initial Survivability					

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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0409 / *DDG-51 Flt III Concept Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Assessment Report (ISAR). Begin formal planning for Full Ship Shock Trials (FSST) to include: environmental protection planning efforts, instrumentation installation planning, and test planning. Begin execution of Developmental Testing (DT), Operational Testing (OT), and Live Fire Test and Evaluation (LFT&E). ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase of $5.726M from FY2023 to FY2024 represents the additional scope for FSST planning and the increase in effort for the Flight III LFT&E program with the start of survivability testing drill development in FY2024.					
Title: Navigation, Aviation, and Hull Mechanical & Electrical (HM&E) Cyber Enclaves Design ***Articles:*** ***FY 2023 Plans:*** N/A ***FY 2024 Base Plans:*** Initiate design effort for the implementation of a Dual Enclave design to physically separate Hull, Mechanical, and Electrical (HM&E) communications from Navigation communications. Develop system requirements, software requirements, and define testing requirements and plans to support Preliminary Design Review (PDR) in Q4 2024. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase in FY2024 initiated the design effort for the Navigation, Aviation, and Hull Mechanical and Electrical (HM&E) Cyber Enclaves for implementation on future new construction ships. FY2024 is the first year of this effort.	0.000 -	0.000 -	8.849 -	0.000 -	8.849 -
Accomplishments/Planned Programs Subtotals	5.995	6.107	20.682	0.000	20.682

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
• SCN 2122/5300: *DDG-51 Class*	3,841.740	7,870.766	4,709.131	-	4,709.131	4,524.569	4,321.240	4,351.256	4,767.817	4,927.728	137,974.806

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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0409 / *DDG-51 Flt III Concept Development*

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

The DDG-51 class ships use a competitive acquisition strategy using Multi-Year Procurement (MYP) contracts awarded to two shipbuilders. DDG 51 follows a similar MYP strategy to support ship procurements for FY 2023 - FY 2027 and will continue this approach for FY 2028 and follow years.

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 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 0409 / *DDG-51 Flt III Concept Development*	

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	SS/CPFF	Boeing : Huntington Beach, CA	0.000	0.000		0.000		7.102	Dec 2023	-		7.102	0.000	7.102	-
Systems Engineering	WR	NIWC Pacific : San Diego, CA	0.000	0.000		0.000		0.500	Oct 2023	-		0.500	0.000	0.500	-
Systems Engineering	WR	NSWC PD : Philadelphia, PA	0.000	0.000		0.000		1.000	Oct 2023	-		1.000	0.000	1.000	-
Systems Engineering	Various	Various : Various	0.000	0.000		0.000		0.245	Nov 2023	-		0.245	0.000	0.245	-
		Subtotal	0.000	0.000		0.000		8.847		-		8.847	0.000	8.847	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
Live Fire Test & Evaluation (LFT&E)	WR	NRL : Washington, DC	0.205	0.327	Oct 2021	0.536	May 2023	0.020	Oct 2023	-		0.020	Continuing	Continuing	Continuing
Live Fire Test & Evaluation (LFT&E)	WR	NSWC CD : Bethesda, MD	1.395	1.488	Oct 2021	0.719	Dec 2022	6.845	Oct 2023	-		6.845	Continuing	Continuing	Continuing
Live Fire Test & Evaluation (LFT&E)	Various	T&E Solutions : Various	0.805	1.285	Apr 2022	0.883	Mar 2023	0.725	Dec 2023	-		0.725	Continuing	Continuing	Continuing
Live Fire Test & Evaluation (LFT&E)	Various	Various : Various	1.513	1.412	Nov 2021	0.510	Nov 2022	2.245	Nov 2023	-		2.245	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	Various	Various : Various	1.278	1.483	Nov 2021	3.459	Mar 2023	2.000	Dec 2023	-		2.000	Continuing	Continuing	Continuing
		Subtotal	5.196	5.995		6.107		11.835		-		11.835	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	5.196	5.995		6.107		20.682		-		20.682	Continuing	Continuing	N/A

Remarks

FY2024 award dates assume appropriations received for start of the fiscal year.

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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0409 / *DDG-51 Flt III Concept Development*

RDTE Schedule FY24 R-Exhibit

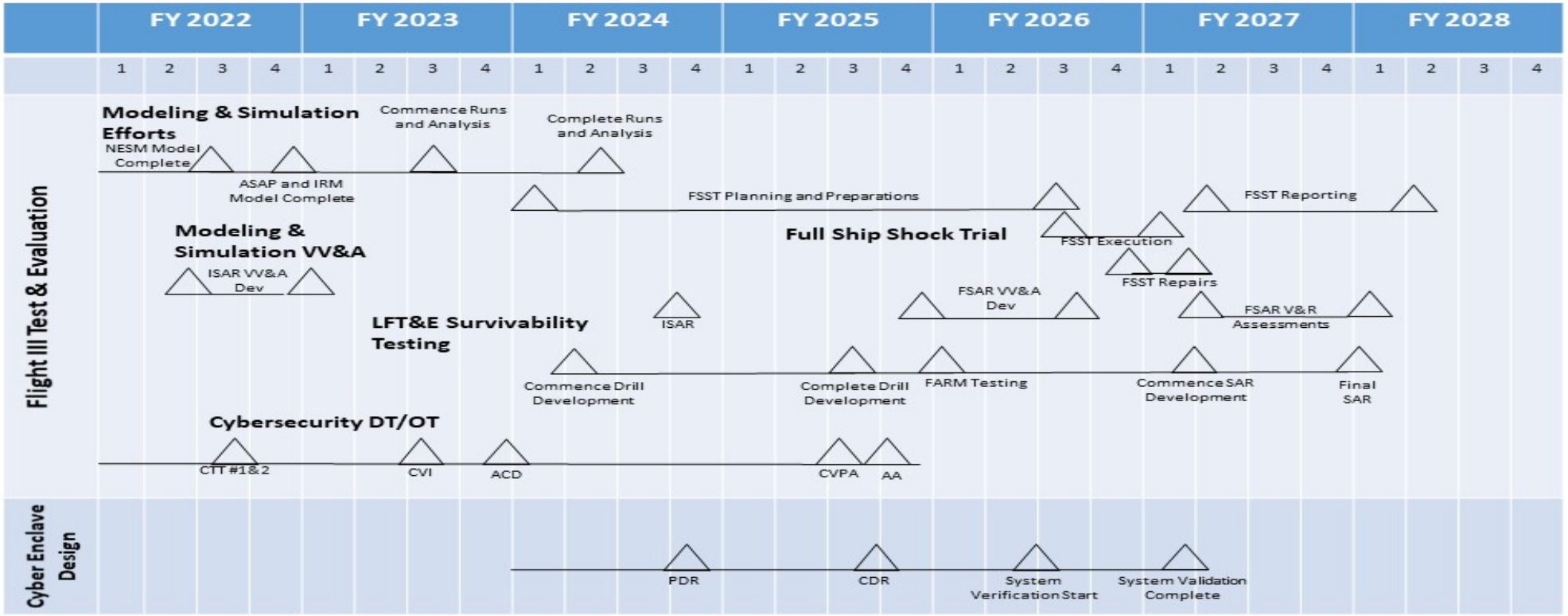


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0409 / *DDG-51 Flt III Concept Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0409				
DDG 51 Flight III Test and Evaluation: Initial Survivability Assessment Report (ISAR) Verification, Validation & Accreditation (VV&A) Development	2	2022	1	2023
DDG 51 Flight III Test and Evaluation: Cyber Table Top (CTT) 1&2	3	2022	3	2022
DDG 51 Flight III Test and Evaluation: Conduct Modeling and Simulation (M&S) Runs, and Analysis	3	2023	2	2024
DDG 51 Flight III Test and Evaluation: Cooperative Vulnerability Identification (CVI)	3	2023	3	2023
DDG 51 Flight III Test and Evaluation: Adversarial Cybersecurity DT Event (ACD)	4	2023	4	2023
DDG 51 Flight III Test and Evaluation: Survivability Test Development	2	2024	3	2025
DDG 51 Flight III Test and Evaluation: Full Ship Shock Trial (FSST) Planning	1	2024	3	2026
DDG 51 Flight III Test and Evaluation: Initial SurvivabilityAssessment Report (ISAR)	4	2024	4	2024
DDG 51 Flight III Test and Evaluation: Cooperative Vulnerability Penetration Assessment (CVPA)	3	2025	3	2025
DDG 51 Flight III Test and Evaluation: Adversarial Assessment (AA)	4	2025	4	2025
DDG 51 Flight III Test and Evaluation: Final Survivability Assessment Report (FSAR) Verification, Validation & Accreditation (VV&A) Development	4	2025	3	2026
DDG 51 Flight III Test and Evaluation: Conduct Failure and Recoverability Mode (FARM) Testing	1	2026	1	2026
DDG 51 Flight III Test and Evaluation: Full Ship Shock Trial (FSST) Execution	3	2026	1	2027
DDG 51 Flight III Test and Evaluation: Full Ship Shock Trial (FSST) Repairs	4	2026	1	2027
DDG 51 Flight III Test and Evaluation: Final Survivability Assessment Report (FSAR) V & R Assessments	2	2027	1	2028
DDG 51 Flight III Test and Evaluation: Final Survivability Assessment Report (SAR) Development	2	2027	1	2028

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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0409 / *DDG-51 Flt III Concept Development*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
DDG 51 Flight III Test and Evaluation: Full Ship Shock Trial (FSST) Reporting	2	2027	2	2028
Navigation, Aviation and Hull, Mechanical & Electrical (HM&E) Cyber Enclaves Design: Preliminary Design Review (PDR)	4	2024	4	2024
Navigation, Aviation and Hull, Mechanical & Electrical (HM&E) Cyber Enclaves Design: Critical Design Review (CDR)	3	2025	3	2025
Navigation, Aviation and Hull, Mechanical & Electrical (HM&E) Cyber Enclaves Design: System Verification and Validation	3	2026	1	2027

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 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 0411 / *DDG(X) Concept Development*	

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
0411: *DDG(X) Concept Development*	12.439	8.297	49.745	74.050	-	74.050	38.186	64.334	40.305	41.116	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

To compete and win in an era of great power competition, the United States needs a balanced Naval force, capable of striking targets from all domains. The force design must emphasize distributed awareness, lethality and survivability in high-intensity conflict. The force must be adaptable, demonstrate presence, and be capable of projecting power by delivering precision effects at long ranges. The Future Naval Force Study (FNFS) and the Future Surface Combatant Force Analysis of Alternatives (FSCF AoA) identified the requirement for future large surface combatants (LSCs) to be capable of hosting directed energy (DE) weapons, larger missiles for increased range and speed, increased magazine depth, growth in organic sensors, and an efficient integrated power system to manage the dynamic loads. DDG 51 Flight (FLT) III is highly capable, but after over 40 years in production and 30 years of upgrades the hull form does not provide sufficient space and center of gravity margin to host these future capabilities. To reset these design allowances for the future of naval warfare, requirements tradeoff and design studies were performed from FY 2018 to FY 2020 that considered modification of existing surface combatant and amphibious ships in addition to new concepts. These studies concluded that DDG(X) is required to deliver the necessary margins and flexibility to succeed the DDG 51 Class as the next enduring LSC combining the DDG 51 FLT III combat system elements with new hull form, an efficient Integrated Power System (IPS) and greater endurance reducing the Fleet logistics burden. By including the DDG 51 FLT III combat system in a new DDG(X) hull, mechanical and electrical (HM&E) baseline, Navy is taking an "evolutionary" (vice "revolutionary") approach to the class. This is a critical lesson learned proven by the successful evolution of the original DD 963 Spruance design of the early 1970s that focused on lead ship HM&E capabilities and upgraded warfare capability over the next 50 years, including evolving DD 963 into the CG 52 class and incorporating the Aegis Combat System. In the early 1980's, the DDG 51 class applied a similar approach by incorporating the proven Aegis Combat System into a new hull form and subsequently executing upgrades over a period greater than 40 years before reaching hull limitations on incorporation of new, larger systems. When DDG(X) enters production, over 30 DDG 51 FLT III Ships will have been in production and early DDG(X) production transition will overlap DDG 51 FLT III production ensuring stability in the Large Surface Combatant industrial base. Furthermore, the fist DDG 51 FLT III ship entered production in FY 2017 and will not be able to accommodate any significant capability upgrades dues to SWAP-c constraints.

The CNO approved DDG(X) Top Level Requirements (TLR) in December 2020 that set the basis for a draft Capabilities Development Document (CDD) released in October 2021. The CDD will enter staffing in FY 2025 and will be validated in FY 2026. FY 2021 and 2022 focused on concept formulation; collaboration with DDG 51 shipyards in program planning; and targeted trade studies to achieve the CNO's cost, schedule and performance targets. FY 2023 efforts established derived requirements from the Draft CDD; specification development; completed system development planning; conducted Systems Requirement Review (SRR); started Preliminary Design; established development and test planning for critical systems per sections 1034 and 131 of the FY 2020 NDAA; and preparations for Contract Design beginning in FY 2027. The planned DDG 51 FLT III follow-on procurements will maintain the industrial base while the DDG(X) design and risk reduction efforts are executed in parallel.

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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0411 / *DDG(X) Concept Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: DDG(X) Design and Analysis	8.297	49.745	74.050	0.000	74.050
Articles:	-	-	-	-	-
Description: Description: DDG(X) Design and Analysis efforts include all of the program and engineering efforts necessary to mature a functional ship design that meets validated requirements. DDG(X) design maturation will occur through the development of progressive technical data packages (TDP) that form design baselines. A collaborative, multi-disciplinary Navy and industry team will develop TDPs using an Integrated Product and Process Development (IPPD) type programmatic approach over four phases: Concept Formulation (FY 2023 complete), Preliminary Design (FY 2023-2027), Contract Design (FY 2027 start), and Detail Design & Construction. Preliminary Design activities will incorporate shipbuilder design inputs into Navy managed specifications and critical system development activities. DDG(X) has assessed two critical systems in accordance sections 1034 and 131 of the FY 2020 National Defense Authorization Act (NDAA): Hull and Integrated Power Systems (IPS). Requirements for DDG(X) necessitate a new hull form. The new hull form will be designed, modeled, tested, and verified prior to Detail Design as risk reduction to engineering changes or potential operational limitations upon delivery. DDG(X) Design and Analysis efforts provide the management and development of derived requirements and specifications to inform the IPS risk reduction procurement and testing executed under PE 0603573N / PU 2471. IPS test findings will be incorporated in final specifications and design products developed under this PE (0603564N / 0411) ensuring that the ship can accommodate the space, weight, power, cooling (SWAP-C) of the IPS and that the IPS can meet DDG(X) power and energy requirements. ***FY 2023 Plans:*** FY 2023 will focus on finalization of Concept Formulation, execution of a System Requirements Review I (SRR-I) and starting Preliminary Design. The collaborative Navy/Industry team will continue to conduct cost and capability trades to complete Concept Formulation and refine design solutions where appropriate to ensure ship design meets acquisition and life cycle cost goals. SRR-I will be conducted to ensure the government has established performance requirements and non-tailorable design requirements are traceable to the CDD. Successful completion of the SRR-1 will initiate the Preliminary Design phase that develops two-dimensional and three-dimensional designs of DDG(X) traceable to an initial ship specification that supports a Functional Baseline Technical Data Package (TDP) in FY 2027. Preliminary Design will begin with the selection of major system components for the functional baseline including power and propulsion system components and deck systems. Key Preliminary Design activities include developing ship configuration and arrangements, overall					

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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0411 / *DDG(X) Concept Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
allocation of space to system architectures, major propulsion, electrical, mission essential mechanical and combat system elements, vendor selections where appropriate and possible, interface control specifications for future warfare systems integration, long lead material candidates, ship manning, cyber-functionality of systems and components, and aviation integration. Development of the specifications and refinement of the Draft CDD requirements in FY 2023 will be accomplished with industry partners to ensure producibility and affordability of detail design and ship construction are taken into account. FY 2023 funds will resource the collaborative design team to an executable level that forms the basis for a design workforce that can execute later design activities. The design team will mature parallel efforts of ship baseline design and critical systems, Hull Form and IPS, to satisfy sections 1034 and 131 of the FY 2020 NDAA and section 221 of the FY 2022 NDAA. - Hull Form risk reduction in FY 2023 will be focused on design and analysis of exploratory hull form model testing completed in FY 2021. The testing results identified hull characteristics from existing hull forms that require iterative refinement to finalize the hull form in FY 2025. Analysis informs the DDG(X) structural design, propeller design, and ship stability that will be tested prior to Milestone B. - IPS specifications derived from DDG(X) ship requirements will be developed to support risk reduction activities and test site hardware procurements via 0603573N/PU 2471. ***FY 2024 Base Plans:*** FY 2024 will focus on maturation of DDG(X) Preliminary Design through hull form and arrangements design, system descriptions and trade studies to establish baseline ship specifications in FY 2025. Industry team members will engage with the industrial supplier base to define ship equipment, including initial procurement of design information for select systems. Aggregation of this information will support the critical design milestone finalizing ship dimensions at Ship Configuration Lock in FY 2025. The draft CDD will be matured in preparation to enter JROC staffing in FY 2025. Development of 3D structural models will commence to support an integrated 3D product model in late FY 2025. Analyses of Warfare System integration requirements will continue to support completion of Interface Control Documents (ICDs) in FY 2025 and the integration of planned and future warfare systems. Utilizing the DDG(X) Integrated Product Process Development (IPPD) type programmatic approach, development of Preliminary Build Strategies and Maintenance Strategy will enable production informed design decisions. The design team will mature parallel efforts of ship baseline design and critical systems, Hull Form and IPS, to satisfy sections 1034 and 131 of the FY 2020 NDAA and section 221 of the FY 2022 NDAA.					

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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0411 / *DDG(X) Concept Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Hull Form risk reduction efforts in FY 2024 continue FY 2023 analytical activities that ensures a fuel efficient hull form will accommodate all major equipment (motors, drives, generators, etc.). This serves as the primary input to finalizing the ship dimensions at Ship Configuration Lock and enables development of physical hull models required for hull critical system testing starting in FY 2025. This testing will continue prior to Milestone B to validate DDG(X) structural design, propeller design, and ship stability. IPS design will be matured to continue development of specifications derived from DDG(X) ship requirements to continue to support risk reduction activities and test site hardware procurements via 0603573N/PU 2471. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** The FY 2024 funding increase from FY 2023 continues the design team ramp up from FY2023 to execute preliminary design activities and begin initial procurement of design information for select systems.					
Accomplishments/Planned Programs Subtotals	8.297	49.745	74.050	0.000	74.050

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

A formal acquisition strategy for DDG(X) is still being developed and will align with Section 130 of the FY 2023 NDAA (CONTRACTS FOR DESIGN AND CONSTRUCTION OF THE DDG(X) DESTROYER PROGRAM). Preliminary, Contract and Detail Designs for DDG(X) will be accomplished through a collaborative, multidisciplinary Navy/Industry team composed of the LSC shipbuilders, suppliers, ship design agents and other subject matter experts. The Navy's intent is to ensure a smooth, overlapping transition between Arleigh Burke (DDG 51) Class and DDG(X). As maturity of the design increases, it is expected that the shipbuilders will take on an increasing level of responsibility for 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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0411 / *DDG(X) Concept Development*

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
DDG(X) Design and Analysis	C/CPAF	Industry : Various	2.363	3.222	Nov 2021	14.629	Nov 2022	15.713	Dec 2023	-		15.713	Continuing	Continuing	Continuing
DDG(X) Design and Analysis	SS/CPAF	Shipbuilders (BIW/ HII) : Various	1.011	1.990	Nov 2021	13.346	Nov 2022	35.084	Nov 2023	-		35.084	Continuing	Continuing	Continuing
DDG(X) Design and Analysis	WR	Other Government Organizations : Various	0.287	0.000	Nov 2021	4.671	Nov 2022	7.905	Dec 2023	-		7.905	Continuing	Continuing	Continuing
DDG(X) Design and Analysis	WR	NSWC Carderock : Carderock, MD	2.087	2.015	Nov 2021	8.333	Nov 2022	6.776	Nov 2023	-		6.776	Continuing	Continuing	Continuing
DDG(X) Design and Analysis	WR	NSWC Philadelphia : Philadelphia, PA	1.422	0.326	Nov 2021	5.130	Nov 2022	5.129	Dec 2023	-		5.129	Continuing	Continuing	Continuing
DDG(X) Design and Analysis	WR	NSWC Dahlgren : Dahlgren, VA	0.676	0.404	Nov 2021	3.022	Nov 2022	2.236	Dec 2023	-		2.236	Continuing	Continuing	Continuing
Power & Prop Risk Mitigation	WR	Other Government Organizations : Various	2.118	0.000		0.000		0.000		-		0.000	0.000	2.118	-
Power & Prop Risk Mitigation	C/CPFF	Various : Various	1.882	0.000		0.000		0.000		-		0.000	0.000	1.882	-
		Subtotal	11.846	7.957		49.131		72.843		-		72.843	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
Program Management Support	WR	Various : Various	0.593	0.340	Oct 2021	0.614	Nov 2022	1.207	Dec 2023	-		1.207	Continuing	Continuing	Continuing
		Subtotal	0.593	0.340		0.614		1.207		-		1.207	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	12.439	8.297		49.745		74.050		-		74.050	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 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 0411 / *DDG(X) Concept Development*	

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract

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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0411 / *DDG(X) Concept Development*

FY24 FYDP
Destroyer Guided Missile DDG(X) Schedule
22 FEB 2023

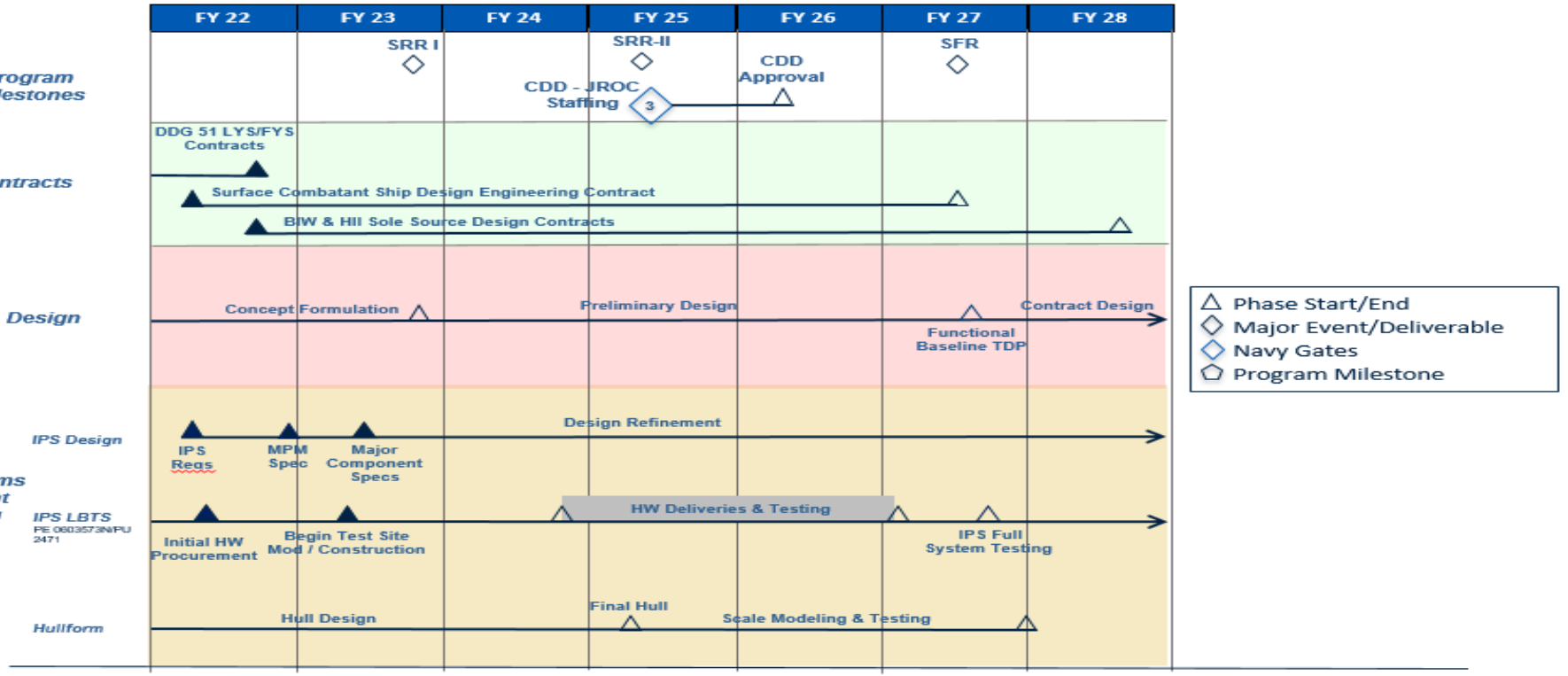


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 0411 / *DDG(X) Concept Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0411				
Conceptual Formulation	1	2022	4	2023
System Requirements Review	4	2023	4	2023
Preliminary Design	4	2023	3	2027
System Functional Review	3	2027	3	2027
Contract Design	3	2027	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 0603564N / *Ship Prel Design & Feasibility Studies*				Project (Number/Name) 3389 / *OPLOG IPT Development*			
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**
3389: *OPLOG IPT Development*	74.833	20.356	19.453	11.921	-	11.921	4.320	4.396	4.420	3.544	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

FY 2016 and prior year efforts were financed under NDSF BA4 PE 0408042N Project 3117 Naval Operational Logistics (OPLOG) Integration. FY 2017, FY 2019 and forward is financed under this Program Element (Project 3389). FY 2018 financed under Congressional add Project 9999/C404 included in prior years shown in this budget.

A. Mission Description and Budget Item Justification

Project 3389 - Develops enabling technologies for future and in-service afloat operational logistics and integrated supply systems; defines integrated combat logistics force and combatant logistics requirements; and conducts cooperative initiatives with acquisition programs, program sponsors, engineering managers, the Navy science and technology community, and Fleet customers. Operational Logistics Integration R&D (OPLOG) develops new logistics platforms, integrated cross-platform (i.e., applicable to more than one ship class/type) operational logistics and operational energy technologies and capabilities, as well as draft acquisition and operations policy ensuring future Naval systems leverage emerging logistic capabilities and technologies to provide operationally effective and efficient logistics delivery for both peacetime and wartime contested environments.

Though the operational logistics family of systems touches all aspects of Naval presence and power projection, operational logistics capability and system interfaces typically have been left to individual acquisition programs to develop and resolve. Technology development is necessary to mitigate technological and operational risk before ship acquisition programs accept new technologies. This project provides a foundation for the transition and systems development of science & technology initiatives evolving from the Office of Naval Research (ONR) Power & Energy Future Naval Capabilities (FNC), Enterprise and Platform Enablers FNC, Seabasing FNC, and from other enabling Government, industry and academia concepts to the acquisition community. Thus, this project resources continued research and development of appropriate technologies with applicability to multiple acquisition programs and defines and matures performance and interface requirements for those technologies. This project continues to identify, develop, integrate, demonstrate, and transition logistics technologies to improve both the cost effectiveness of Fleet at sea logistics delivery in peacetime, as well as delivery capability effectiveness in wartime, through outreach, coordination and collaboration with industry, academia, Fleet, and Enterprise representatives.

This project will continue to develop new logistics platforms, improved shipboard replenishment, transfer, and handling systems and components, as well as asset visibility and standardized packaging technologies. This project includes development of approaches to reduce operation and maintenance costs of, and energy consumption by the logistics Fleet. This integrated suite of developed capabilities will enable multiple ship types to leverage technologies common across DoD (Joint) and commercial transportation networks to provide a more affordable, energy efficient, and contested environment mission capable force. These capabilities and system-of-systems approach will be applied to concept development of future auxiliary force architectures.

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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3389 / *OPLOG IPT Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Advanced Systems	19.991	19.388	11.856	0.000	11.856
Articles:	-	-	-	-	-
FY 2023 Plans: Research, development, and testing of advanced refueling systems and concepts to include: completing operationally relevant testing of the subscale Seabased Petroleum Distribution System (SPDS) prototype and continue development of the full scale prototype, to include large materials procurement and continuation of full scale prototype fabrication, and starting the tech data package; continue improved Modular Fuel Delivery Station (iMFDS) development, prototype fabrication and prepare for land based testing; complete additional prototype fabrication and testing of Modular CONSOL Adapter Kits (MCAK).					
FY 2024 Base Plans: Research, development, and testing of advanced refueling systems and concepts to include: completion of the full scale Seabased Petroleum Distribution System (SPDS) prototype, to include fabrication and testing and continuation of the tech data package; complete iMFDS land based test, prepare for and complete pierside testing and start development of the tech data package.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of funding by $7.532 due to a decrease in materials procured for SPDS and iMFDS fabrication in FY 2024.					
Title: Logistics Architectures	0.065	0.065	0.065	0.000	0.065
Articles:	-	-	-	-	-
Description: This is annual funding needed by the Center for Naval Analyses (CNA) to maintain the Combat Logistics Force database so OPLOG can utilize the data to support logistics R&D and concept development.					
FY 2023 Plans: Center for Naval Analyses (CNA) collects data and maintains the Combat Logistics Force (CLF) database to support ongoing and future analyses for OPLOG R&D.					
FY 2024 Base 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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3389 / *OPLOG IPT Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Center for Naval Analyses (CNA) collects data and maintains the Combat Logistics Force (CLF) database to support ongoing and future analyses for OPLOG R&D. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** No change.					
Title: Shipboard Energy Conservation (E-STREAM) ***Articles:*** ***FY 2023 Plans:*** N/A ***FY 2024 Base Plans:*** N/A ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** N/A	0.300 -	0.000 -	0.000 -	0.000 -	0.000 -
Accomplishments/Planned Programs Subtotals	20.356	19.453	11.921	0.000	11.921

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable for OPLOG 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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3389 / *OPLOG IPT Development*

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
Primary Hardware Development	Various	VARIOUS : Various	28.015	8.600	Jan 2022	10.828	Jan 2023	3.108	Jan 2024	-		3.108	Continuing	Continuing	Continuing
Ancillary Hardware Development	Various	VARIOUS : Various	8.509	2.247	Jan 2022	2.750	Jan 2023	0.750	Jan 2024	-		0.750	Continuing	Continuing	Continuing
Ship Integration	Various	VAROUS : Various	4.300	0.700	Jan 2022	0.650	Jan 2023	0.550	Jan 2024	-		0.550	Continuing	Continuing	Continuing
Ship Suitability	Various	VARIOUS : Various	3.300	0.300	Jan 2022	0.250	Jan 2023	0.200	Jan 2024	-		0.200	Continuing	Continuing	Continuing
System Engineering	Various	VARIOUS : Various	6.750	0.850	Jan 2022	0.465	Jan 2023	0.450	Jan 2024	-		0.450	Continuing	Continuing	Continuing
		Subtotal	50.874	12.697		14.943		5.058		-		5.058	Continuing	Continuing	N/A

Remarks

1. Primary Hardware Development, Ancillary Hardware Development and System Engineering is related to the Advanced Systems CONSOL, iMFDS, and SeaBased Petroleum Distribution System (SPDS) prototype development
2. Award dates reflect initial award of incremental execution.
3. PY includes FY 2017 project 3389 and FY 2018 Congressional Add project C404.

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
Development Support	Various	VARIOUS : Various	4.095	0.434	Jan 2022	0.520	Jan 2023	0.425	Jan 2024	-		0.425	Continuing	Continuing	Continuing
Software Development	Various	VARIOUS : Various	0.150	0.025	Jan 2022	0.025	Jan 2023	0.025	Jan 2024	-		0.025	Continuing	Continuing	Continuing
Integrated Logistics Support	Various	VARIOUS : Various	1.343	0.150	Jan 2022	0.080	Jan 2023	0.080	Jan 2024	-		0.080	Continuing	Continuing	Continuing
Configuration Management	Various	VARIOUS : Various	3.132	0.100	Jan 2022	0.075	Jan 2023	0.075	Jan 2024	-		0.075	Continuing	Continuing	Continuing
Technical Data	Various	VAROUS : Various	2.750	0.150	Jan 2022	0.125	Jan 2023	0.125	Jan 2024	-		0.125	Continuing	Continuing	Continuing
Studies & Analysis	Various	VARIOUS : Various	1.110	0.700	Jan 2022	0.650	Jan 2023	0.300	Jan 2024	-		0.300	Continuing	Continuing	Continuing
		Subtotal	12.580	1.559		1.475		1.030		-		1.030	Continuing	Continuing	N/A

Remarks

1. Award dates reflect initial award of incremental execution.
2. PY includes FY 2017 project 3389 and FY 2018 Congressional Add project C404.

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 0603564N / *Ship Prel Design & Feasibility Studies*	Project (Number/Name) 3389 / *OPLOG IPT Development*	

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	5.375	2.900	Jan 2022	2.200	Jan 2023	2.958	Jan 2024	-		2.958	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	Various	VARIOUS : Various	3.924	2.800	Jan 2022	0.460	Jan 2023	2.500	Jan 2024	-		2.500	Continuing	Continuing	Continuing
		Subtotal	9.299	5.700		2.660		5.458		-		5.458	Continuing	Continuing	N/A

Remarks

1. Award dates reflect initial award of incremental execution.
2. PY includes FY 2017 project 3389 and FY 2018 Congressional Add project C404.
3. Increase in FY 2024 for Operational Test & Evaluation supports the Seabased Petroleum Distribution System (SPDS) and Improved Modular Fuel Delivery System (iMFDS).

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
Contractor Engineering Support	Various	VARIOUS : Various	0.811	0.150	Jan 2022	0.125	Jan 2023	0.125	Jan 2024	-		0.125	Continuing	Continuing	Continuing
Government Engineering Support	Various	VARIOUS : Various	1.269	0.250	Jan 2022	0.250	Jan 2023	0.250	Jan 2024	-		0.250	Continuing	Continuing	Continuing
		Subtotal	2.080	0.400		0.375		0.375		-		0.375	Continuing	Continuing	N/A

Remarks

1. Award dates reflect initial award of incremental execution.
2. PY includes FY 2017 project 3389 and FY 2018 Congressional Add project C404.

	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	74.833	20.356		19.453		11.921		-		11.921	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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3389 / *OPLOG IPT Development*

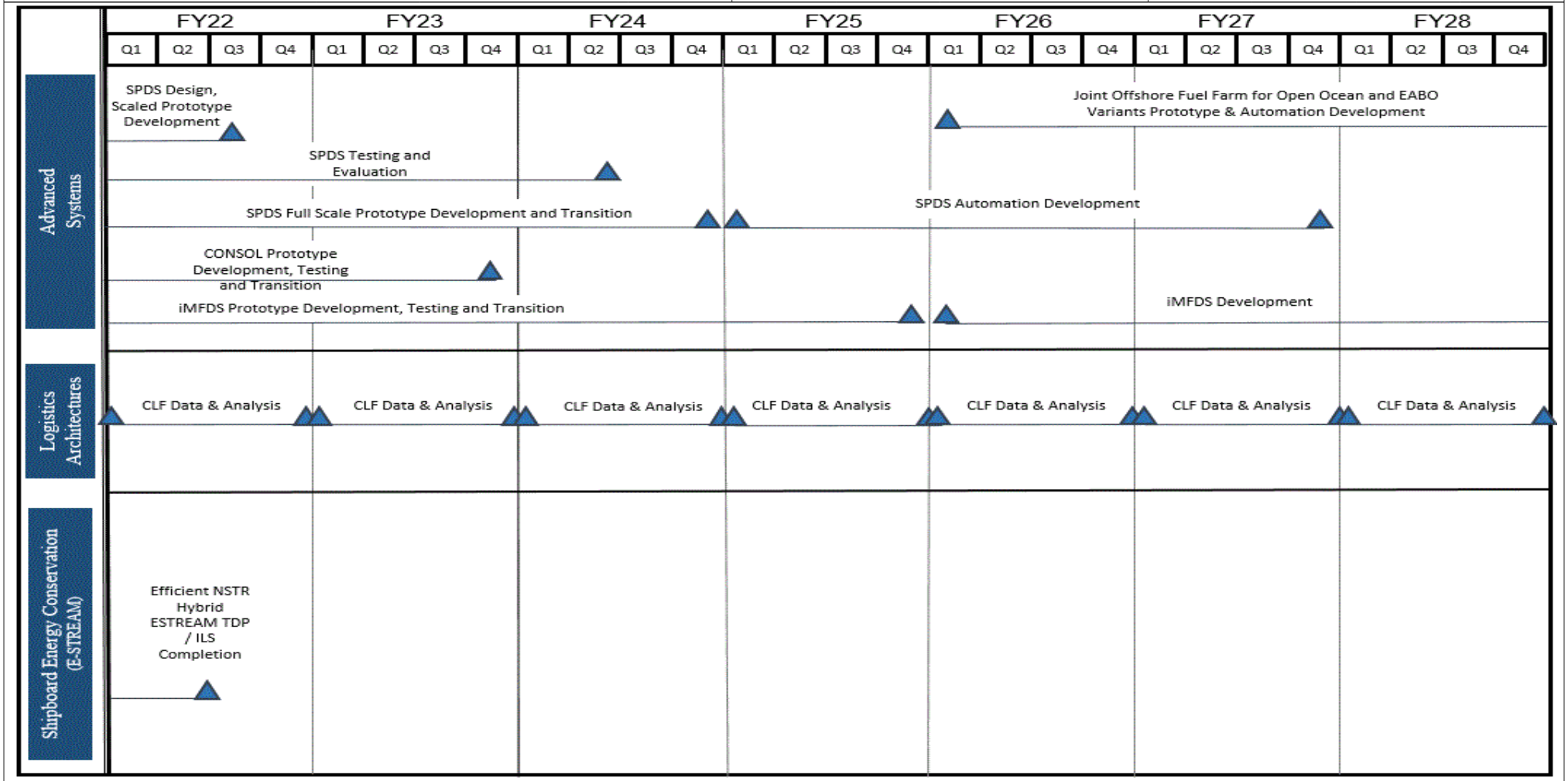


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 3389 / *OPLOG IPT Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3389				
Advanced Systems	1	2022	4	2028
Logistics Architectures	1	2022	4	2028
Shipboard Energy Conservation (E-STREAM)	1	2022	2	2022

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 0603564N / *Ship Prel Design & Feasibility Studies*	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*	0.000	0.000	0.000	14.749	-	14.749	7.500	6.978	7.074	7.215	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Prior to FY24, RDT&E requirements were detailed in PE 0603563N/Ship Concept Advanced Design.
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	0.000	0.000	14.749	0.000	14.749
Articles:	-	-	-	-	-
FY 2023 Plans: FY2023 Plans shown under PE 0603563N, Project 4044.					
FY 2024 Base Plans: Following the release of the Detail Design and Construction Request for Proposal (DD&C RFP) in FY 2023, the program will execute source selection efforts to support award by 2QFY25. Tasks include Engineering, Logistics, Program Management, and Test and Evaluation support. FY 2024 efforts will continue the development for Command, Control, Communications, Computers, and Intelligence (C4I) systems and shipboard network. Continue Government Furnished Equipment (GFE) systems engineering efforts to ensure full ship integration. Identification of cyber security/information assurance (IA) measures on the C4I suite to pace the current and future threats.					

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 0603564N / *Ship Prel Design & Feasibility Studies*	**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
Logistics tasks continue in training development, Integrated Logistics Assessment (ILA) results analysis and update, support for Planning and Design for Homeport 1, advance planning for Homeport 2, and updates to program Milestone documentation. Continue Test and Evaluation Master Plan (TEMP) updates and continue WIPTs required to achieve TEMP approval. Planning and execution of developmental test events. Program Management support continues for development of the statutory and regulatory required program documentation to support upcoming Navy Gate Program Reviews and the combine Milestone B/C. The focus of FY 2024 will be the source selection activities, including technical and cost evaluation to support an award in FY 2025. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase from FY 2023 to FY 2024 is the source selection efforts to award Lead Ship in FY 2025					
Accomplishments/Planned Programs Subtotals	0.000	0.000	14.749	0.000	14.749

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
• SCN/3050: *Medium Landing Ship*	0.000	0.000	0.000	-	0.000	187.928	149.234	297.024	296.196	0.000	930.382
• 0603563N: *Medium Landing Ship*	12.667	12.167	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	44.864

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 0603564N / *Ship Prel Design & Feasibility Studies*	**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	0.000	0.000		0.000		0.500	Nov 2023	-		0.500	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		0.500		-		0.500	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
Engineering Support	TBD	Various : Various	0.000	0.000		0.000		7.700	Nov 2023	-		7.700	Continuing	Continuing	Continuing
Logistics Support	TBD	Various : Various	0.000	0.000		0.000		1.700	Nov 2023	-		1.700	Continuing	Continuing	Continuing
Program Mgmt Support	TBD	Various : Various	0.000	0.000		0.000		2.707	Nov 2023	-		2.707	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		12.107		-		12.107	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)	TBD	Various : Various	0.000	0.000		0.000		2.142	Nov 2023	-		2.142	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		2.142		-		2.142	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	0.000	0.000		0.000		14.749		-		14.749	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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 4044 / *Medium Landing Ship*

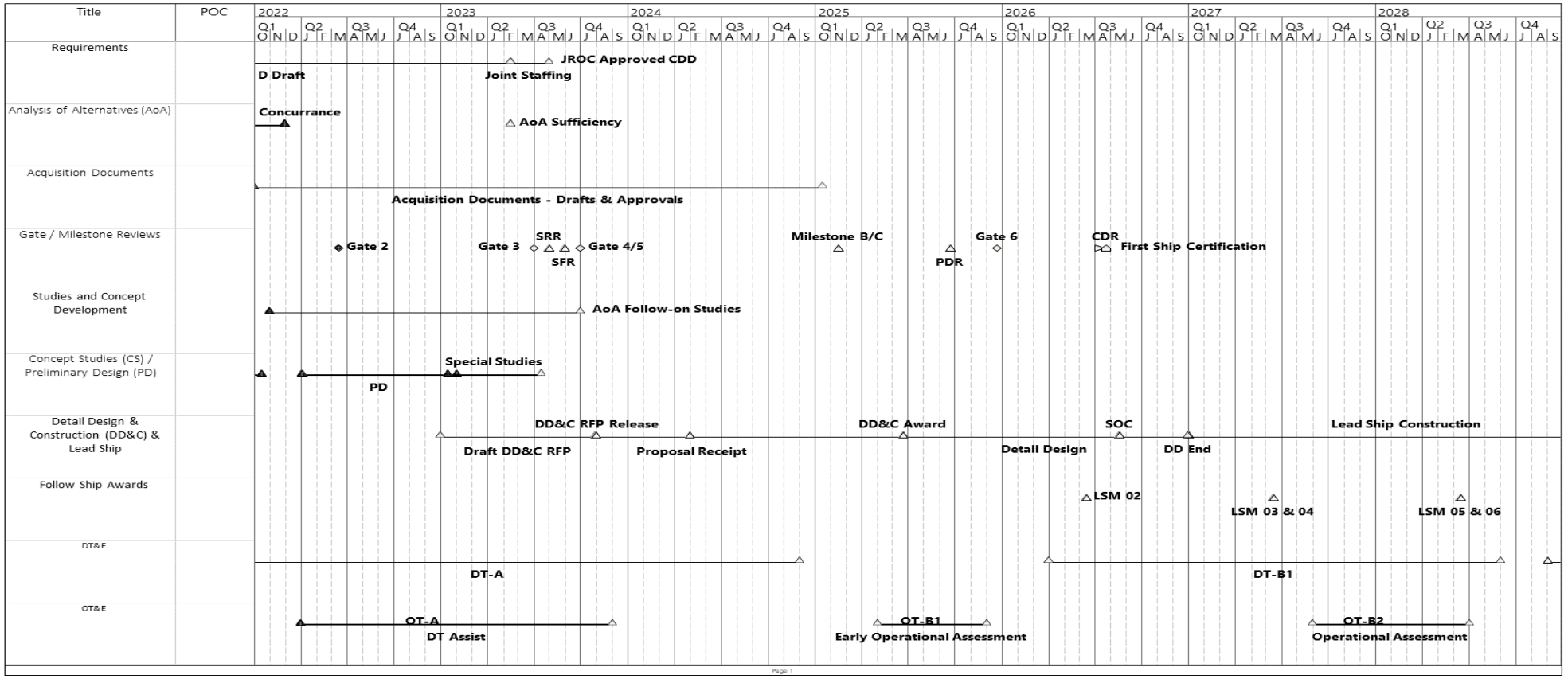


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 4044 / *Medium Landing Ship*

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 0603564N / *Ship Prel Design & Feasibility Studies*	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*	10.000	4.824	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.824
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

With the mishaps related to the McCain and Fitzgerald collisions, the U.S. Navy seeks oversight and modernization of surface fleet bridge configurations. The goal of the Bridge Integration Program is to modernize bridges for functional commonality and improved watch stander performance. In order to identify trends that will improve to bridge commonality, rigorous and methodical data analysis, such as modeling and simulation, will be employed. The results of this analysis will ultimately lead to a reduced number of bridge configurations, allowing Sailors to more easily transition between ship assignments and reducing the cost of maintaining trainers across multiple bridge configurations.

The T-AH(X) Hospital ship program will recapitalize aging Role 3 medical services ships. The primary mission of these ships is to provide rapid, flexible, and mobile acute health services support to military personnel deployed ashore and afloat with a secondary mission of providing mobile surgical hospital service and acute medical care for disaster or humanitarian relief. USNS MERCY class ships will retire from service beginning in FY36, after over 60 years of service. Conduct of a Requirements Evaluation Team for development of Top Level Requirements and performance of initial ship feasibility studies is planned.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023
Congressional Add: Preliminary ship design of next-gen hospital ship	4.824	0.000
FY 2022 Accomplishments: FY 2022 funded requirements development via a Requirements Evaluation Team (RET), as well as, conduct of feasibility studies with Industry. Efforts include medical mission analysis and development, systems engineering, naval architecture and marine engineering in support of design development. Efforts will also support future Analysis of Alternatives.		
FY 2023 Plans: There is currently no additional funding planned in FY2023.		
Congressional Adds Subtotals	4.824	0.000

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 0603564N / *Ship Prel Design & Feasibility Studies*	**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
Feasibility Studies	Various	Various : Various	0.000	2.824	Nov 2022	0.000		0.000		-		0.000	0.000	2.824	-
		Subtotal	0.000	2.824		0.000		0.000		-		0.000	0.000	2.824	N/A

Remarks

C754: Feasibility Studies awarded to industry partners.

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
SCS / BI PARM Analysis	IA	GSA : Illinois	8.700	0.000		0.000		0.000		-		0.000	0.000	8.700	-
SCS / BI PARM Analysis	WR	NSWC : TBD	1.300	0.000		0.000		0.000		-		0.000	0.000	1.300	-
PM & Engineering Support	Various	various : various	0.000	1.000	Apr 2022	0.000		0.000		-		0.000	0.000	1.000	-
Technical Support	Various	various : various	0.000	1.000	Apr 2022	0.000		0.000		-		0.000	0.000	1.000	-
		Subtotal	10.000	2.000		0.000		0.000		-		0.000	0.000	12.000	N/A

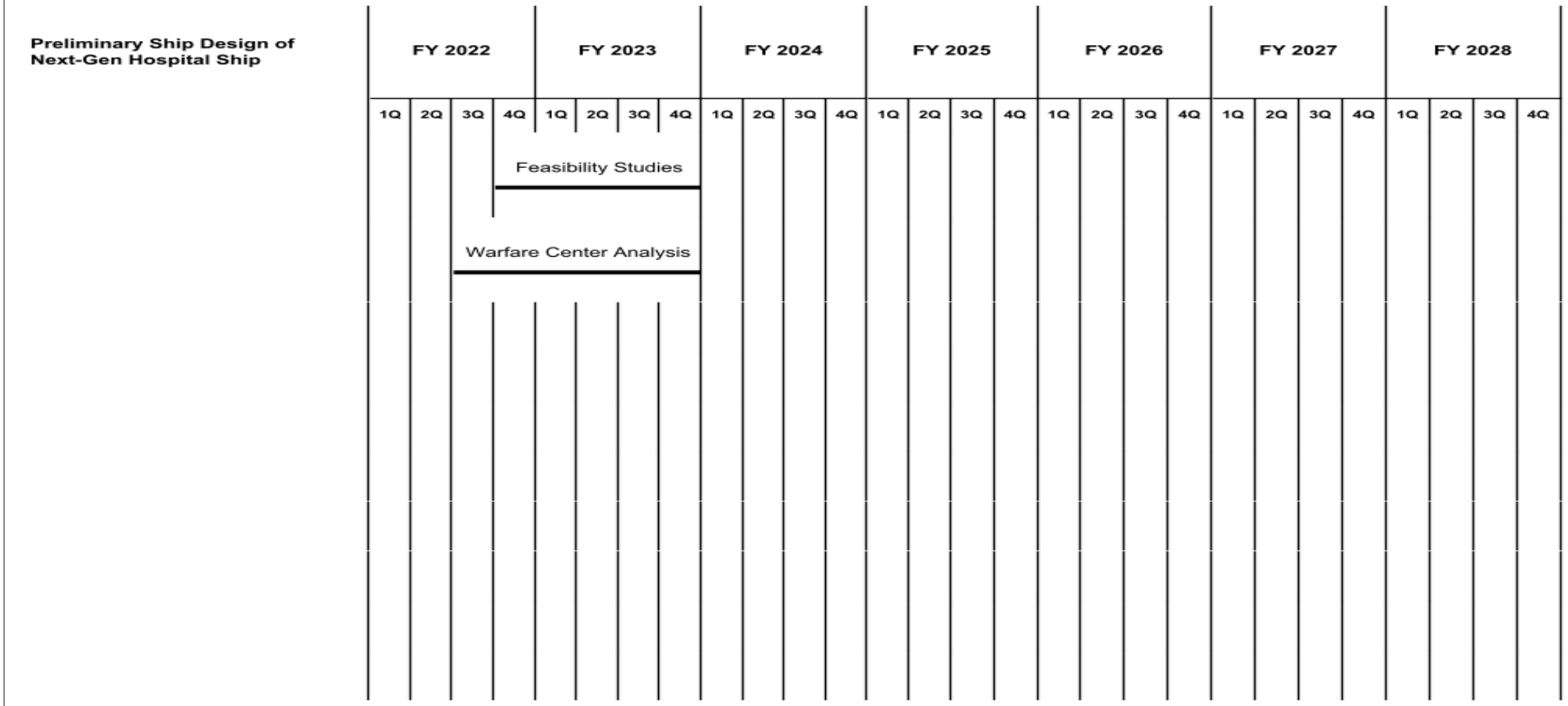
Remarks

C754: Feasibility Studies Analysis and requirements development PM/Technical and Engineering support.

	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	10.000	4.824		0.000		0.000		-		0.000	0.000	14.824	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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 9999 / *Congressional Adds*



2024DON - 0603564N - 9999

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 0603564N / *Ship Prel Design & Feasibility Studies*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Preliminary Ship Design of Next-Gen Hospital Ship				
Feasibility Studies	4	2022	4	2023
Warfare Center Analysis	3	2022	4	2023