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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2023 Navy **Date:** April 2022

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604850N / SSN(X)
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	0.000	0.990	29.548	143.949	-	143.949	344.916	353.371	495.651	345.420	Continuing	Continuing
2368: <i>SSN(X) Class Submarine Development</i>	0.000	0.990	29.548	143.949	-	143.949	344.916	353.371	495.651	345.420	Continuing	Continuing

**Note**

Program Element (PE)/Project was established in FY 2021 for the development of the SSN(X) Class Submarine.

**A. Mission Description and Budget Item Justification**

The U.S. Navy must protect the security of the American people by defending against great powers, regional adversaries, and transnational threats. Strategic Competition is increasing the demand on the U.S. Navy submarine force. Submarines will be the principal method to deterring strategic competition aggression and will be the first to fight. The U.S. Navy must meet the rising challenge by delivering a new SSN. SSN(X) will be designed to counter the growing threat posed by near peer adversary competition for undersea supremacy. It will provide greater speed, increased horizontal payload capacity, improved acoustic superiority, and higher operational availability. SSN(X) will conduct full spectrum undersea warfare and be able to coordinate with a larger contingent of off-hull vehicles, sensors, and friendly forces. It will retain and improve multi-mission (ASW, ASuW, Strike, SOF, Mine, SSW, ISR) capability and sustained combat presence in denied waters. SSN(X) can operate independently or integrated within a Task Force. The primary goal of the SSN(X) program element will be to evaluate a broad range of submarine technologies, sensors, and combat system components required to produce an affordable platform which supports these mission requirements.

SSN(X) will continue to define requirement options and refine cost estimates to support a mid to late 2030s construction contract award. FY 2021 focused on the start of development efforts in concept studies and technology. FY 2022 focused on completing the Initial Capabilities Document (ICD) and conducting studies and technology development efforts in preparation for the Analysis of Alternatives (AoA). Funds also supported acquisition documentation development and support; engineering support efforts; and ship design management efforts. As the SSN(X) program continues to ramp up, FY 2023 efforts will focus on trade studies and technology AoA studies and the continuation of technology development and studies; acquisition documentation development and support; engineering support efforts; ship design management efforts; and beginning technology development informed by the ICD. Additionally, SSN(X) will leverage studies and development efforts from the Virginia Class and Columbia Class Submarines.

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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>
Previous President's Budget	0.996	29.829	0.000	-	0.000
Current President's Budget	0.990	29.548	143.949	-	143.949
Total Adjustments	-0.006	-0.281	143.949	-	143.949
• Congressional General Reductions	-	-0.281			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.006	0.000			
• Program Adjustments	0.000	0.000	0.000	-	0.000
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	143.949	-	143.949

**Change Summary Explanation**

FY22:

-\$281K for FFRDC Reduction

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FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Navy										<b>Date:</b> April 2022		
<b>Appropriation/Budget Activity</b> 1319 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604850N / SSN(X)				<b>Project (Number/Name)</b> 2368 / SSN(X) Class Submarine Development			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
2368: SSN(X) Class Submarine Development	0.000	0.990	29.548	143.949	-	143.949	344.916	353.371	495.651	345.420	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

SSN(X) will be designed to counter the growing threat posed by near peer adversary competition for undersea supremacy. It will provide greater speed, increased horizontal payload capacity, improved acoustic superiority, and higher operational availability. SSN(X) will conduct full spectrum undersea warfare and be able to coordinate with a larger contingent of off-hull vehicles, sensors, and friendly forces. This project encompasses Navy RDT&E efforts required to design the next SSN to replace the VIRGINIA Class Submarine.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>
<b>Title:</b> SSN(X) Class Submarine Development	0.990	29.548	143.949	0.000	143.949
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> N/A					
<b>FY 2022 Plans:</b>					
<ul style="list-style-type: none"> <li>- Begin the Analysis of Alternatives (AoA) study plan and trade / AoA studies work</li> <li>- Completion of the Initial Capabilities Document (ICD) for service-level approval</li> <li>- Begin preparation for Gate 1</li> <li>- Continue advanced technology development studies to achieve the prioritized performance targets</li> <li>- Increase support in technical and concept development studies including cost estimates and performance assessments to define the submarine platform design trade space and develop requirements for SSN(X)</li> <li>- Increase support in trade studies and technical information needed to support an Analysis of Alternatives (AoA)</li> <li>- Continue mission evaluation work and aligning processes to evaluate concept designs in mission scenarios</li> <li>- Increase support in concept development and development of assessment modeling &amp; simulations</li> <li>- Continue developing near term and long term schedules and identifying resource requirements to support SSN(X)</li> </ul>					
<b>FY 2023 Base Plans:</b>					
<ul style="list-style-type: none"> <li>- Continue preparation and completion of Gate 1</li> <li>- Continue trade studies / Analysis of Alternatives (AoA) studies</li> </ul>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Navy		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604850N / SSN(X)	<b>Project (Number/Name)</b> 2368 / SSN(X) Class Submarine Development

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>
<ul style="list-style-type: none"> <li>- Begin advanced technology development to better inform requirements definition and overall program risks (technical, schedule, and costs) associated with technology maturity</li> <li>- Continue and increase technical and concept development studies to define the submarine platform design trade space so that requirements definition can be done based on whole-ship concept risks (cost, schedule, and performance)</li> <li>- Continue mission evaluation work and aligning processes to evaluate concept designs in mission scenarios</li> <li>- Continue studies and development of advanced materials</li> <li>- Continue and significantly increase modeling and simulation efforts to support concept development and technology development. Establish SSN(X) model based systems engineering process</li> <li>- Begin acquisition documentation in preparation for Gate 2 and Milestone A</li> <li>- Continue developing near term and long term schedules and identifying resource requirements to support SSN(X)</li> </ul> <p><b>FY 2023 OCO Plans:</b> N/A</p> <p><b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> FY 2023 increase is due to the ramp up of the SSN(X) Class Submarine Development Program. Concept and technical studies and modeling and simulation efforts increase to support AoA studies and capabilities/ requirement definition.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	0.990	29.548	143.949	0.000	143.949

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

SSN(X) is currently developing the acquisition strategy. Program office plans to utilize work requests for government warfare center initial concept and trade studies in FY 2021 through FY 2023 to assist with requirements definition. Additional R&D efforts will be performed by Navy laboratories, shipyards, private industry, and University Affiliated Research Centers.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2023 Navy</b>											<b>Date: April 2022</b>				
<b>Appropriation/Budget Activity</b> 1319 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604850N / SSN(X)					<b>Project (Number/Name)</b> 2368 / SSN(X) Class Submarine Development				

<b>Product Development (\$ in Millions)</b>				<b>FY 2021</b>		<b>FY 2022</b>		<b>FY 2023 Base</b>		<b>FY 2023 OCO</b>		<b>FY 2023 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Shipbuilder Studies	C/CPFF	Various : Various	0.000	0.000		4.000	Oct 2021	24.000	Oct 2022	-		24.000	Continuing	Continuing	Continuing
Technical Studies	WR	NSWC CD : Carderock, MD	0.000	0.700	Oct 2020	6.786	Oct 2021	37.077	Oct 2022	-		37.077	Continuing	Continuing	Continuing
Technical Studies	WR	NUWC NPT : Newport, RI	0.000	0.200	Oct 2020	5.836	Oct 2021	24.842	Oct 2022	-		24.842	Continuing	Continuing	Continuing
Technical Studies	WR	NSWC PD : Philadelphia, PA	0.000	0.090	Oct 2020	0.526	Oct 2021	5.623	Oct 2022	-		5.623	Continuing	Continuing	Continuing
Concept / R&D Studies	Various	Various : Various	0.000	0.000		0.250	Oct 2021	3.173	Nov 2022	-		3.173	Continuing	Continuing	Continuing
Modeling & Simulation Development	WR	NSWC CD : Carderock, MD	0.000	0.000		3.871	Oct 2021	15.455	Oct 2022	-		15.455	Continuing	Continuing	Continuing
Acquisition Documentation	Various	Various : Various	0.000	0.000		1.996	Oct 2021	5.392	Oct 2022	-		5.392	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	0.990		23.265		115.562		-		115.562	Continuing	Continuing	N/A

**Remarks**  
 Acquisition Documentation includes the ICD, trade studies, AoA studies, and AoA development  
 Technical Studies at CD, PD & NPT - efforts include technical development, R&D development, concept development, mission evaluation, technology AoA studies and trade/feasibility studies  
 Concept Studies: Various - Includes UARC and Lab studies

<b>Support (\$ in Millions)</b>				<b>FY 2021</b>		<b>FY 2022</b>		<b>FY 2023 Base</b>		<b>FY 2023 OCO</b>		<b>FY 2023 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Government Engineering Support	WR	NSWC CD : Carderock, MD	0.000	0.000		2.865	Oct 2021	9.025	Oct 2022	-		9.025	Continuing	Continuing	Continuing
Government Engineering Support	WR	NUWC NPT : Newport, RI	0.000	0.000		0.680	Oct 2021	3.570	Oct 2022	-		3.570	Continuing	Continuing	Continuing
Government Engineering Support	WR	NSWC PD : Philadelphia, PA	0.000	0.000		0.150	Oct 2021	1.575	Oct 2022	-		1.575	Continuing	Continuing	Continuing
Contractor Engineering Support	C/CPFF	Various : Various	0.000	0.000		0.515	Dec 2021	4.043	Dec 2022	-		4.043	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	0.000		4.210		18.213		-		18.213	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy** **Date:** April 2022

<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604850N / SSN(X)	<b>Project (Number/Name)</b> 2368 / SSN(X) Class Submarine Development
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Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

**Remarks**  
Engineering Support includes technical, concept, cost, and R&D support for SSN(X) studies and development efforts

Management Services (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Support	C/CPFF	Various : Various	0.000	0.000		1.357	Dec 2021	5.699	Dec 2022	-		5.699	Continuing	Continuing	Continuing
Program Mgt Support	Various	Various : Various	0.000	0.000		0.716	Nov 2021	4.475	Nov 2022	-		4.475	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	0.000		2.073		10.174		-		10.174	Continuing	Continuing	N/A

**Remarks**  
Program Management Support includes Program Office, cost, and acquisition support, and program office travel.

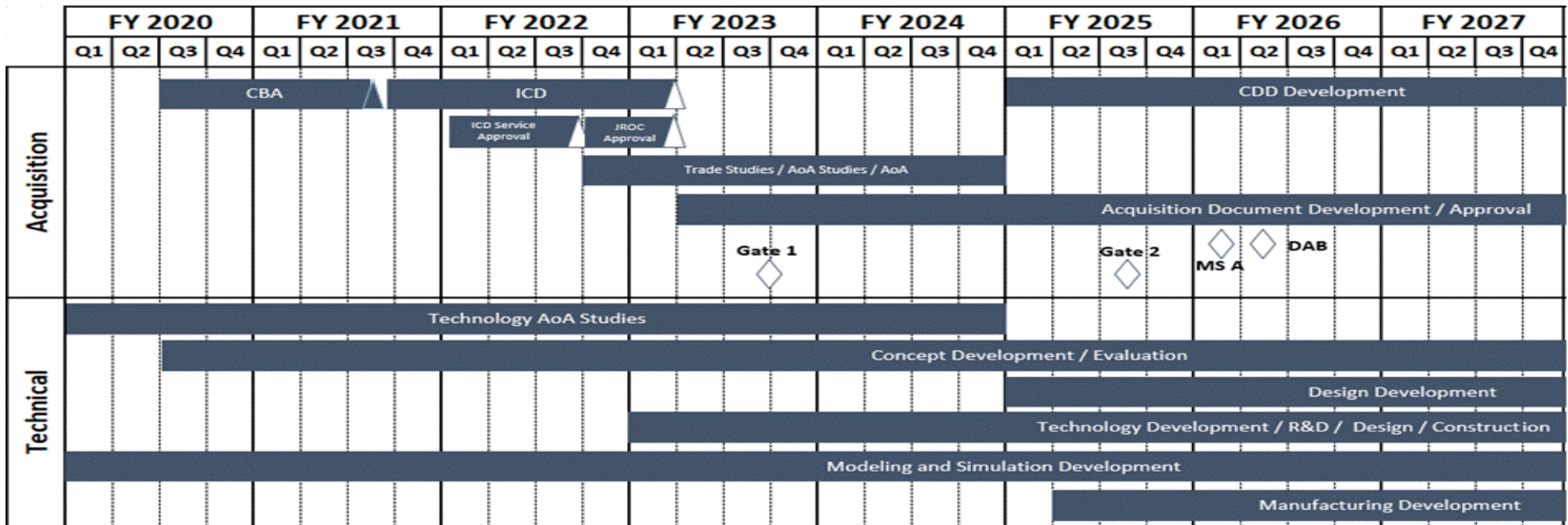
	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	0.000	0.990	29.548	143.949	-	143.949	Continuing	Continuing	N/A

**Remarks**  
FY 2023 starts the major ramp up of funding for the program to support the development of the SSN(X) Class Submarine. Concept and technical studies and modeling and simulation efforts increase to support AoA studies and capabilities/requirement definition.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2023 Navy</b>		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604850N / SSN(X)	<b>Project (Number/Name)</b> 2368 / SSN(X) Class Submarine Development

## SSN(X) Class Program Schedule



**ACRONYMS:**

CBA: Capabilities Based Assessment  
 ICD: Initial Capabilities Document  
 CDD: Capabilities Development Document

DAB: Defense Acquisition Board  
 AoA: Analysis of Alternatives  
 R&D: Research & Development

JROC: Joint Requirement Oversight Council  
 MS: Milestone

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2023 Navy		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 1319 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604850N / SSN(X)	<b>Project (Number/Name)</b> 2368 / SSN(X) Class Submarine Development

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 2368</b>				
Acquisition: Capabilities Based Assessment (CBA)	1	2021	3	2021
Acquisition: Initial Capabilites Document (ICD) Development and Approval	3	2021	1	2023
Acquisition: Gate 1 Approval	3	2023	3	2023
Acquisition: Trade Studies / AoA Studies / AoA	4	2022	4	2024
Acquisition: Acquisition Document Development / Approval	2	2023	4	2027
Acquisition: Gate 2 Approval	3	2025	3	2025
Acquisition: Milestone (MS) A Approval	1	2026	1	2026
Acquisition: Capability Development Document (CDD) Development	1	2025	4	2027
Technical: Technology AoA Studies	1	2021	4	2024
Technical: Concept Development / Evaluation	1	2021	4	2027
Technical: Modeling and Simulation Development and Validation	1	2021	4	2027
Technical: Technology Development / R&D / Design	1	2023	4	2027
Technical: Design Development	1	2025	4	2027
Technical: Manufacturing Development	2	2025	4	2027