



Selected Acquisition Report (SAR)

RCS:DD-A&T(Q&A)823-374



Littoral Combat Ship (LCS)

As of FY 2019 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

~~This document contains information that may be exempt from mandatory disclosure under the FOIA.~~

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Sensitivity Originator

Organization: PEO LCS/PMS 501

Organization Email:

Organization Phone: 202-781-4296

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
\$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
\$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President's Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name

Littoral Combat Ship (LCS)

DoD Component

Navy

Responsible Office

CAPT Mike Taylor
Naval Sea Systems Command
1333 ISAAC HULL AVE SE
Washington Navy Yard, DC 20376-7003

michael.e.taylor@navy.mil

Phone: 202-781-1918

Fax: 202-781-4573

DSN Phone: 326-1918

DSN Fax:

Date Assigned: July 31, 2017

References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated April 7, 2011

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated April 7, 2011

Mission and Description

The role of the Littoral Combat Ship (LCS) is to provide joint forces access in the littoral. LCS is designed to be a fast, agile, and networked surface combatant. It will focus on three primary anti-access mission areas within Littoral Surface Warfare operations: prosecution of small boats, mine warfare, and littoral anti-submarine warfare. Its high speed and ability to operate at economical loiter speeds will enable fast and calculated responses to small boat threats, mine laying and quiet diesel submarines. LCS employment of networked sensors for Intelligence, Surveillance, and Reconnaissance in support of Special Operations Forces will directly enhance littoral mobility. Its shallow draft will allow easier excursion into shallower areas for both mine countermeasures and small boat prosecution. Using LCS against these asymmetric threats will enable Joint Commanders to concentrate multi-mission combatants on primary missions such as precision strike, battle group escort and theater air defense.

Executive Summary

Program Highlights Since Last Report

In 2017, the LCS Program continued to validate and deliver capability for combat-ready ships to the Fleet. Each LCS variant has achieved IOC and 29 LCS Seaframes have been awarded to date: 11 have delivered to the Navy, 13 are in various stages of production, and five are in pre-production status. The LCS program constantly reviews lessons learned from construction, testing, and fleet operation for incorporation into ships in construction, ships in post delivery, and ships already in the fleet.

USS CORONADO (LCS 4) continued forward-deployed operations on her maiden deployment to the Western Pacific, completing multiple exercises and operations with naval allies, including a successful Cooperation Afloat Readiness and Training (CARAT) exercise. In August 2017, LCS 4 conducted a successful live-fire of the Harpoon Block 1C missile, striking a target at a significant distance from the ship's visual range, demonstrating the LCS's lethality while deployed overseas.

USS LITTLE ROCK (LCS 9) completed Acceptance Trial (AT) with zero starred cards. LCS 9 and OMAHA (LCS 12) delivered to the Navy in September 2017. LCS 9 was commissioned in December 2017.

USS MILWAUKEE (LCS 5), USS JACKSON (LCS 6), USS DETROIT (LCS 7), USS MONTGOMERY (LCS 8), and USS GABRIELLE GIFFORDS (LCS 10) are executing Post Shakedown Availabilities and completing post-delivery work packages and to reduce the transfer of risk to the fleet at their respective homeports of Mayport, FL (LCS 5, LCS 7, and LCS 9) and San Diego, CA (LCS 6, LCS 8, and LCS 10). LCS 10 completed Final Contract Trials in November 2017.

MANCHESTER (LCS 14) completed AT in December 2017 with zero starred cards and plans to deliver in February 2018. SIOUX CITY (LCS 11) plans to deliver in spring 2018.

LCS 13 and LCS 15 through LCS 24 are in various stages of production.

On June 9, 2017, USD(AT&L) approved revision 4 of the LCS Acquisition Strategy. Revision 4 authorized the Navy to procure the third LCS in FY 2017 as authorized by Congress. Revision 5 of the LCS Acquisition Strategy for the procurement of the FY 2018 and FY 2019 LCS is in process.

On June 23, 2017, the Navy executed the USD(AT&L) approved FY 2017 LCS Acquisition Strategy by awarding one of the three LCS (LCS 28) to Austal USA. On October 6, 2017, the Navy awarded the remaining two FY 2017 ships, one (LCS 27) to Lockheed Martin and one (LCS 30) to Austal USA, which sustains the current industrial base.

The PB 2019 submission requests \$646.2M to procure one LCS in FY 2019. The total program estimate reflected in this SAR represents the costs of 32 budgeted LCS. FY 2019 PB supports the Navy's strategy to transition to FFG(X) in FY 2020.

The PB 2019 submission requests \$103.2M of cost to complete for FY 2014 (LCS 17 - 20) and FY 2015 (LCS 21 - 22, LCS 24) as is consistent with approved Milestone B cost estimate.

In April 2011, in conjunction with the LCS Seaframe Milestone B decision, USD(AT&L) certified the LCS Seaframe program pursuant to section 2366b of title 10, United States Code (U.S.C.), with waivers. Specifically, USD(AT&L) was unable to certify three provisions, and without these waivers the Department would be unable to meet critical national security objectives. Provisions (a)1(B) (affordability) and 1(D) (funding available) were waived due to a total resource and funding shortfall in the period covered by the FYDP submitted in FY 2011 when the certification was made. The required remaining resources are outside the FYDP as submitted in PB 2019. For the waiver to provision (a)1(C) (reasonable cost estimates with concurrence of Director, Cost Assessment & Program Evaluation ((D),CAPE)), the D,CAPE continues to monitor the cost estimates as the program progresses through the budget cycles.

In the contract section, Current Contract Price (\$M), Estimated Price at Completion (\$M) and Cost and Schedule Variance

for the contracts included in this report are For ~~Official Use Only~~ - Exempt from FOIA release under 5 U.S.C. 552(b)(4).

No specific LCS Seaframe operational testing was accomplished in 2017, however the LCS program conducted Combat System Ship Qualification Tests (CSSQT) on LCS 6, LCS 7, LCS 8, and LCS 10. FREEDOM variant (LCS 1) and INDEPENDENCE variant (LCS 2) have each attained IOC. Future mission package test and evaluation will be conducted on in-service LCS.

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

History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	Significant Development Description
May 2004	Milestone A/Program Initiation for LCS Seaframes and Mission Modules.
December 2004	Detail Design and Construction contract option for LCS 1 awarded, funded with RDT&E to Lockheed Martin. The contract also included an option for LCS 3, funded with Ship Construction, Navy (SCN).
October 2005	Detail Design and Construction contract option for LCS 2 awarded, funded with RDT&E to Bath Iron Works. The contract also included an option for LCS 4, funded with SCN.
1st Quarter FY 2007	Contract options for the construction of LCS 3 and LCS 4 terminated in part for convenience, in April and November 2007 respectively.
1st Quarter FY 2009	Contract award for the construction of LCS 3 and LCS 4.
January 2010	Acquisition Strategy for the down select, block buy of 10 LCS of one design with a second source for the construction of five more LCS was approved by USD (AT&L) on January 25, 2010.
December 2010	Acquisition Strategy modified by the Navy and approved by USD(AT&L) to continue procurement of both designs in a Block Buy. Block Buy contracts for up to 10 ships each awarded to Lockheed Martin and Austal USA.
February 2011	Milestone B DAB conducted for the Seaframe portion of the LCS program.
April 2011	Milestone B DAB ADM approved the 55 LCS Seaframe program's entry into EMD and the split of Seaframes and Mission Modules management into two separate MDAPs.
January 2013	Chief of Naval Operations (CNO) Navy Combatant Vessel Force Structure Requirement reduced LCS total program procurement quantity from 55 to 52, consistent with the 2012 Defense Strategic Guidance.
February 2014	Secretary of Defense (SECDEF) Memo of February 24, 2014 directed no contract negotiations beyond 32 LCS will go forward. Directed Navy to complete a study to support future procurement of a capable and lethal small surface combatant. Navy submitted a 32 ship SAR.
April 2014	USS FORT WORTH (LCS 3) completed Initial Operational Test and Evaluation (IOT&E) events and achieved IOC of the FREEDOM variant.
October 2014	As a result of the fiscal constraints under the Bipartisan Budget Act, which shifted funding for one LCS from FY 2015 to FY 2016, the Navy had to modify its Acquisition Strategy. USD(AT&L) approved revision 2 of the LCS Acquisition Strategy on October 17, 2014 for the procurement of three ships in FY 2015 and three ships in FY 2016. The 2016 National Defense Authorization Act authorized the extension of the Block Buy contract to support the award of the two FY 2016 LCS (LCS 25 and LCS 26).
December 2014	SECDEF Memo of December 24, 2014 approved the Navy plan to procure a small surface combatant (SSC) based on an upgraded Flight 0+ LCS for a total of 52 Flight 0+ LCS and SSC. Navy submitted a 32 LCS SAR.
March 2015	On March 31, 2015, the Block Buy contracts were modified to add FY 2016 LCS as options.
4th Quarter FY 2015	USS CORONADO (LCS 4) completed IOT&E events and achieved IOC of the INDEPENDENCE variant.
December 2015	SECDEF Memo of December 14, 2015 directed the Navy to build no more than 40 LCS and Frigate and to down select to one variant not later than FY 2019. Navy submitted a 40 ship SAR (29 LCS/11 Frigate), consistent with PB 2017 and SECDEF guidance.
February 2016	CNO directed the establishment of the LCS Review Team.

March 2016	USD(AT&L) approved a revised LCS and Frigate Acquisition Strategy on March 29, 2016 reflecting SECDEF direction to procure a total LCS/Frigate inventory of 40 ships.
4th Quarter FY 2016	In 2016, the LCS Program completed Full Ship Shock Trials on LCS 6 (USS JACKSON, INDEPENDENCE variant) and LCS 5 (USS MILWAUKEE, FREEDOM variant), as part of the Director, Operational Test and Evaluation approved Live Fire Test and Evaluation Plan.
May 2017	PB 2018 submission supports Navy's strategy to transition to a new Frigate by FY 2020 and procure additional LCS in FY 2018 and FY 2019. Navy submitted a 32 LCS SAR, an increase of three LCS from the December 2015 SAR, consistent with PB 2018 and supporting transition to a Frigate in FY 2020.
June 2017	USD(AT&L) approved a revised LCS Acquisition Strategy on June 9, 2017 authorizing the Navy to procure a third LCS in FY 2017 as authorized by Congress.
February 2018	CNO memo of February 8, 2018 stated the LCS Seaframe program of record is 32 ships.

Threshold Breaches

APB Breaches

Schedule		<input checked="" type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input checked="" type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
O&S Cost		<input type="checkbox"/>
Unit Cost	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

Explanation of Breach

The LCS 2 Initial Operational Test & Evaluation (IOT&E)/IOC schedule breach was previously reported in the December 2013 SAR. These requirements were subsequently resolved through the USS CORONADO (LCS 4) conduct of IOT&E events in August-October 2015, leading to attainment of IOC for the INDEPENDENCE variant.

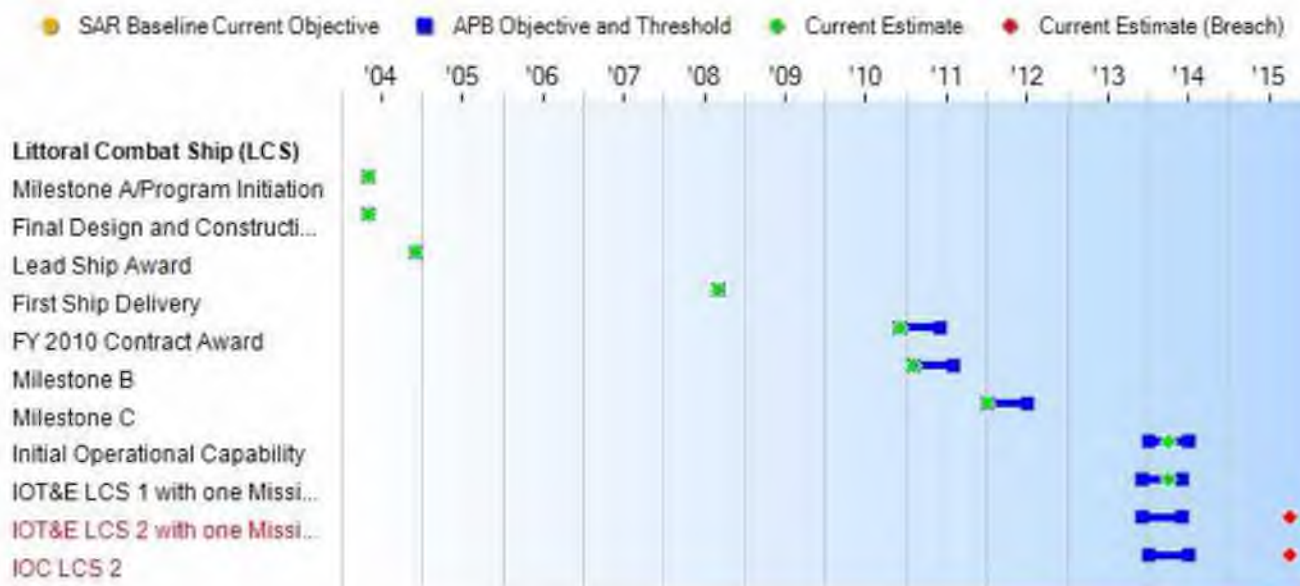
Both variants of LCS have achieved IOC.

MILCON APB breach is the result of additional funding required to expand the current LCS Facilities footprint to accommodate the ashore component of crew training and administrative functions for deployed ships, in-port ships, and off-hull crews. The facilities support efforts beyond operational crew training and include LCS Squadron Command staff and Fleet Operations. Due to the nature of the funding and the multi-purpose function of the facility, it is not possible to separate funds as LCS Seaframe-specific.

Nunn-McCurdy Breaches

Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Schedule



Schedule Events				
Events	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate
Milestone A/Program Initiation	May 2004	May 2004	May 2004	May 2004
Final Design and Construction Contract Award	May 2004	May 2004	May 2004	May 2004
Lead Ship Award	Dec 2004	Dec 2004	Dec 2004	Dec 2004
First Ship Delivery	Sep 2008	Sep 2008	Sep 2008	Sep 2008
FY 2010 Contract Award	Dec 2010	Dec 2010	Jun 2011	Dec 2010
Milestone B	Feb 2011	Feb 2011	Aug 2011	Feb 2011
Milestone C	Jan 2012	Jan 2012	Jul 2012	Jan 2012
Initial Operational Capability	Jan 2014	Jan 2014	Jul 2014	Apr 2014
IOT&E LCS 1 with one Mission Package	Dec 2013	Dec 2013	Jun 2014	Apr 2014
IOT&E LCS 2 with one Mission Package	Dec 2013	Dec 2013	Jun 2014	Oct 2015 ¹
IOC LCS 2	Jan 2014	Jan 2014	Jul 2014	Oct 2015 ¹

¹ APB Breach

Change Explanations

None

Notes

Both variants of LCS have achieved IOC.

Delivery Dates of Ships Currently Authorized or Under Construction:

LCS 11 - Jun 2018

LCS 13 - Jul 2018

LCS 14 - Feb 2018

LCS 15 - Dec 2018

LCS 16 - Apr 2018

LCS 17 - Jun 2019

LCS 18 - Jul 2018

LCS 19 - Dec 2019

LCS 20 - Mar 2019

LCS 21 - Jun 2020

LCS 22 - Aug 2019

LCS 23 - Nov 2020

LCS 24 - Apr 2020

LCS 25 - Jun 2021

LCS 26 - Nov 2020

LCS 27 - Oct 2022

LCS 28 - Jan 2022

LCS 30 - Oct 2022

The above delivery dates are consistent with the PB19 submission.

Acronyms and Abbreviations

IOT&E - Initial Operational, Test and Evaluation

Performance

Performance Characteristics				
SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate
Navigational Draft (ft)				
10	10	20	15.7 / 15.4 ft	15.7 / 15.4 ft
Sprint Speed (kts)				
50	50	40	36.9 / 40.2 kts	40 / 40.2 kts
Range at Transit Speed (includes payload)				
4,300 nm @ 16 kts	4,300 nm @ 16 kts	3,500 nm @ 14 kts	3405nm / 6040nm @ 14 kts	3500nm / 6040nm @ 14 kts
Mission Package Payload (Weight)				
210 MT (130 MT) mission package/80 MT mission package fuel)	210 MT (130 MT) mission package/80 MT mission package fuel)	180 MT (105 MT mission package/75 MT mission package fuel)	180 MT / 180 MT	180 MT / 180 MT - (105 MT) mission package/75 MT mission package fuel)
Net- Ready: The system must support Net-Centric military operations. The system must be able to enter and be managed in the network, and exchange data in a secure manner to enhance mission effectiveness. The system must continuously provide survivable, interoperable, secure, and operationally effective information exchanges to enable a Net-Centric military capability.				
The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include 1) DISR mandated GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) IA requirements including availability, integrity, authentication, confidentiality, and	The system must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include 1) DISR mandated GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) IA requirements including availability, integrity, authentication,	The system must fully support execution of joint critical operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for transition to Net-Centric military operations to include 1) DISR mandated GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) IA requirements	TBD / TBD	The system for both LCS variants will fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical requirements for Net-Centric military operations to include 1) DISR mandated GIG IT standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Enterprise Services 4) IA requirements including availability,

(Ch-1)

nonrepudiation, and issuance of an ATO by the DAA, And 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	ion, confidentiality, and nonrepudiation, and issuance of an ATO by the DAA, And 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	including availability, integrity, authentication, confidentiality, and nonrepudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.		integrity, authentication, confidentiality, and nonrepudiation, and issuance of an ATO by the DAA, And 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.
Core Crew Manning (# Core Crew Members)				
15	15	50	50 Core Crew / 50 Core Crew	50 Core Crew / 50 Core Crew
Materiel Availability				
0.712	0.712	0.64	TBD / TBD	0.64 / 0.64
Systems Training (Core Crew)				
Trained-to-Certify at all Team (Watch Section) levels	Trained-to-Certify at all Team (Watch Section) levels	Trained-to-Qualify at individual level (billet/watch station)	TBD / TBD	Trained-to-Qualify at Individual level (billet/watch station) / Trained-to-Qualify at Individual level (billet/watch station)

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

Requirements Reference

Flight 0+ Capability Development Document (CDD) dated June 17, 2008

Change Explanations

(Ch-1) The Range at Transit Speed (includes payload) KPP revised from 4285nm @ 14 kts to 6040nm @ 14 kts to reflect actual performance data on the INDEPENDENCE variant.

Acronyms and Abbreviations

ATO - Authority to Operate
DAA - Designated Approval Authority
DISR - DoD IT Standards Registry
ft - Feet

GIG - Global Information Grid
IA - Information Assurance
IATO - Interim Authority to Operate
IT - Information Technology
KIP - Key Interface Profile
kts - Knots
MT - Metric Ton
NCOW RM - Net-Centric Operations Warfare Reference Model
nm - Nautical Miles
TV - Technical View

Track to Budget

General Notes

PB 2019 RDT&E Program Element (PE) 0603599N, Project 3086 funds the Frigate program and is not part of the LCS Seaframe acquisition program.

PB 2019 RDT&E PE 0604756N, Project 2070 funds identified as being LCS Seaframe-specific are not part of the LCS Seaframe acquisition program and are accounted for in Operations and Sustainment.

PB 2019 Other Procurement, Navy (OPN) PE 0204230N, Line Item (LI) 9020 funds identified as being LCS Seaframe-specific are not part of the LCS Seaframe acquisition program and are accounted for in Operations and Sustainment.

PB 2019 OPN PE 0204228N, LI 5231 funds identified as being LCS Seaframe-specific are not part of the LCS Seaframe acquisition program and are accounted for in Operations and Sustainment.

PB 2019 Weapons Procurement, Navy (WPN) LI 2292 funds identified as being LCS Seaframe-specific are not part of the LCS Seaframe acquisition program.

PB 2019 Military Construction, Navy (MCN) PE 0911376N, LI 60201426 and PE 0815976N, LI 60201427 are multi-purpose facilities utilized for both LCS Seaframe and Operations and Sustainment functions. It is not possible to separate funds as LCS Seaframe-specific.

RDT&E

Appn	BA	PE
Navy	1319 04	0603581N
Project	Name	
3096	Littoral Combat Ship (Shared)	
Notes:	Littoral Combat Ship Development	
4018	Littoral Combat Ship (Sunk)	
Notes:	Littoral Combat Ship Construction	
4506	LCS Training	
9999	Congressional Add (Sunk)	
Notes:	Littoral Combat Ship/Revised Acquisition Strategy	
9999	Congressional Add (Sunk)	
Notes:	LCS Training Courseware	

Procurement

Appn	BA	PE
Navy	1611 02	0204230N
Line Item		
2127	Littoral Combat Ship (Shared)	
Navy	1611 05	0204230N
Line Item		
5110	Outfitting (Shared)	
5300	Completion of Prior Year Shipbuilding Programs (Shared)	

Navy 1810 01 0204230N

Line Item	Name
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0944	LCS Class Equipment	(Shared)	
1320	Other Ship Training Equipment	(Shared)	(Sunk)
1604	LCS In-Service Modernization		

Navy 1810 04 0204230N

Line Item	Name
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5664	Surface Training Equipment	(Shared)
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MILCON

Appn	BA	PE
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Navy 1205 01 0203176N

Project	Name
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00245499	LCS Facility Support	(Sunk)
00245500	LCS Training Facility	(Sunk)
60201425	LCS Logistics Support Facility	(Shared) (Sunk)

Navy 1205 01 0212176N

Project	Name
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63005970	LCS Ship Maintenance Support Facility	(Sunk)
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Navy 1205 01 0815976N

Project	Name
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60201423	LCS Operational Trainer Facility	(Shared) (Sunk)
60201427	LCS Operational Trainer Facility Addition	

Navy 1205 03 0901211N

Project	Name
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64482044	MCON Design Funds	(Shared)
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Navy 1205 01 0911376N

Project	Name
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60201426	LCS Support Facility
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Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2010 \$M			BY 2010 \$M	TY \$M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	3433.3	3433.3	3776.6	3052.1	3481.7	3481.7	3034.8
Procurement	28369.2	28369.2	31206.1	15222.2	33720.5	33720.5	17923.6
Flyaway	--	--	--	15222.2	--	--	17923.6
Recurring	--	--	--	15222.2	--	--	17923.6
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	0.0	--	--	0.0
Other Support	--	--	--	0.0	--	--	0.0
Initial Spares	--	--	--	0.0	--	--	0.0
MILCON	208.5	208.5	229.4	229.9 ¹	236.6	236.6	267.1
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	32011.0	32011.0	N/A	18504.2	37438.8	37438.8	21225.5

¹ APB Breach

Cost Notes

In accordance with Section 842 of the National Defense Authorization Act for FY 2017, which amended title 10 U.S.C. § 2334, the Director of Cost Assessment and Program Evaluation, and the Secretary of the military department concerned or the head of the Defense Agency concerned, must issue guidance requiring a discussion of risk, the potential impacts of risk on program costs, and approaches to mitigate risk in cost estimates for MDAPs and major subprograms. The information required by the guidance is to be reported in each SAR. This guidance is not yet available; therefore, the information on cost risk is not contained in this SAR.

The FY 2019 PB submission requests \$646.2M to procure one LCS in FY 2019. The estimate reflected in this SAR represents the costs for the 32 LCS program.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	2	2	2
Procurement	53	53	30
Total	55	55	32

Quantity Notes

The estimate reflected in this SAR represents the costs for the 32 LCS program only. There is no change in quantity from the December 2016 SAR.

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2019 President's Budget / December 2017 SAR (TY\$ M)									
Appropriation	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
RDT&E	2943.8	41.0	28.0	12.6	7.6	0.9	0.9	0.0	3034.8
Procurement	14355.0	1423.5	1063.3	286.0	198.9	239.6	193.2	164.1	17923.6
MILCON	153.7	1.9	111.5	0.0	0.0	0.0	0.0	0.0	267.1
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2019 Total	17452.5	1466.4	1202.8	298.6	206.5	240.5	194.1	164.1	21225.5
PB 2018 Total	17472.4	1466.4	1124.1	268.9	207.0	194.0	191.6	128.5	21052.9
Delta	-19.9	0.0	78.7	29.7	-0.5	46.5	2.5	35.6	172.6

Funding Notes

The estimate reflected in this SAR represents the costs for the 32 LCS program.

Quantity Summary										
FY 2019 President's Budget / December 2017 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Development	2	0	0	0	0	0	0	0	0	2
Production	0	27	2	1	0	0	0	0	0	30
PB 2019 Total	2	27	2	1	0	0	0	0	0	32
PB 2018 Total	2	27	2	1	0	0	0	0	0	32
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding							
1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2003	--	--	--	--	--	--	35.8
2004	--	--	--	--	--	--	116.8
2005	--	--	--	--	--	--	369.8
2006	--	--	--	--	--	--	384.5
2007	--	--	--	--	--	--	573.1
2008	--	--	--	--	--	--	200.9
2009	--	--	--	--	--	--	197.4
2010	--	--	--	--	--	--	260.1
2011	--	--	--	--	--	--	83.2
2012	--	--	--	--	--	--	147.4
2013	--	--	--	--	--	--	168.9
2014	--	--	--	--	--	--	165.5
2015	--	--	--	--	--	--	80.2
2016	--	--	--	--	--	--	109.4
2017	--	--	--	--	--	--	50.8
2018	--	--	--	--	--	--	41.0
2019	--	--	--	--	--	--	28.0
2020	--	--	--	--	--	--	12.6
2021	--	--	--	--	--	--	7.6
2022	--	--	--	--	--	--	0.9
2023	--	--	--	--	--	--	0.9
Subtotal	2	--	--	--	--	--	3034.8

Annual Funding								
1319 RDT&E Research, Development, Test, and Evaluation, Navy								
Fiscal Year	Quantity	BY 2010 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2003	--	--	--	--	--	--	--	41.1
2004	--	--	--	--	--	--	--	130.5
2005	--	--	--	--	--	--	--	402.7
2006	--	--	--	--	--	--	--	406.1
2007	--	--	--	--	--	--	--	590.8
2008	--	--	--	--	--	--	--	203.4
2009	--	--	--	--	--	--	--	197.3
2010	--	--	--	--	--	--	--	256.1
2011	--	--	--	--	--	--	--	80.0
2012	--	--	--	--	--	--	--	139.5
2013	--	--	--	--	--	--	--	158.2
2014	--	--	--	--	--	--	--	152.8
2015	--	--	--	--	--	--	--	73.2
2016	--	--	--	--	--	--	--	98.1
2017	--	--	--	--	--	--	--	44.8
2018	--	--	--	--	--	--	--	35.6
2019	--	--	--	--	--	--	--	23.8
2020	--	--	--	--	--	--	--	10.5
2021	--	--	--	--	--	--	--	6.2
2022	--	--	--	--	--	--	--	0.7
2023	--	--	--	--	--	--	--	0.7
Subtotal	2	--	--	--	--	--	--	3052.1

RDT&E, Navy for the program includes the detail design and construction of two Flight 0 ships in addition to the program development, test and evaluation, training development, and sustained engineering for LCS.

Annual Funding 1810 Procurement Other Procurement, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2012	--	--	20.4	--	20.4	--	20.4
2013	--	--	27.5	--	27.5	--	27.5
2014	--	--	69.1	--	69.1	--	69.1
2015	--	--	34.1	--	34.1	--	34.1
2016	--	--	83.6	--	83.6	--	83.6
2017	--	--	65.7	--	65.7	--	65.7
2018	--	--	90.8	--	90.8	--	90.8
2019	--	--	144.6	--	144.6	--	144.6
2020	--	--	92.9	--	92.9	--	92.9
2021	--	--	76.5	--	76.5	--	76.5
2022	--	--	71.4	--	71.4	--	71.4
2023	--	--	72.8	--	72.8	--	72.8
Subtotal	--	--	849.4	--	849.4	--	849.4

Annual Funding 1810 Procurement Other Procurement, Navy							
Fiscal Year	Quantity	BY 2010 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2012	--	--	19.2	--	19.2	--	19.2
2013	--	--	25.6	--	25.6	--	25.6
2014	--	--	63.4	--	63.4	--	63.4
2015	--	--	30.9	--	30.9	--	30.9
2016	--	--	74.5	--	74.5	--	74.5
2017	--	--	57.6	--	57.6	--	57.6
2018	--	--	78.2	--	78.2	--	78.2
2019	--	--	122.2	--	122.2	--	122.2
2020	--	--	77.0	--	77.0	--	77.0
2021	--	--	62.2	--	62.2	--	62.2
2022	--	--	56.9	--	56.9	--	56.9
2023	--	--	56.9	--	56.9	--	56.9
Subtotal	--	--	724.6	--	724.6	--	724.6

Other Procurement, Navy for the program includes battle spares, shore based trainers, and safety changes for LCS.

Annual Funding 1611 Procurement Shipbuilding and Conversion, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2009	2	1339.7	--	--	1339.7	--	1339.7
2010	2	1056.0	--	--	1056.0	--	1056.0
2011	2	1189.1	--	--	1189.1	--	1189.1
2012	4	1719.6	--	--	1719.6	--	1719.6
2013	4	1787.7	--	--	1787.7	--	1787.7
2014	4	1862.2	--	--	1862.2	--	1862.2
2015	3	1690.0	--	--	1690.0	--	1690.0
2016	3	1603.1	--	--	1603.1	--	1603.1
2017	3	1807.2	--	--	1807.2	--	1807.2
2018	2	1332.7	--	--	1332.7	--	1332.7
2019	1	918.7	--	--	918.7	--	918.7
2020	--	193.1	--	--	193.1	--	193.1
2021	--	122.4	--	--	122.4	--	122.4
2022	--	168.2	--	--	168.2	--	168.2
2023	--	120.4	--	--	120.4	--	120.4
2024	--	138.7	--	--	138.7	--	138.7
2025	--	25.4	--	--	25.4	--	25.4
Subtotal	30	17074.2	--	--	17074.2	--	17074.2

Annual Funding 1611 Procurement Shipbuilding and Conversion, Navy							
Fiscal Year	Quantity	BY 2010 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2009	2	1287.8	--	--	1287.8	--	1287.8
2010	2	981.0	--	--	981.0	--	981.0
2011	2	1070.4	--	--	1070.4	--	1070.4
2012	4	1515.0	--	--	1515.0	--	1515.0
2013	4	1545.8	--	--	1545.8	--	1545.8
2014	4	1582.9	--	--	1582.9	--	1582.9
2015	3	1411.3	--	--	1411.3	--	1411.3
2016	3	1315.9	--	--	1315.9	--	1315.9
2017	3	1457.1	--	--	1457.1	--	1457.1
2018	2	1054.7	--	--	1054.7	--	1054.7
2019	1	713.1	--	--	713.1	--	713.1
2020	--	147.0	--	--	147.0	--	147.0
2021	--	91.3	--	--	91.3	--	91.3
2022	--	123.0	--	--	123.0	--	123.0
2023	--	86.3	--	--	86.3	--	86.3
2024	--	97.5	--	--	97.5	--	97.5
2025	--	17.5	--	--	17.5	--	17.5
Subtotal	30	14497.6	--	--	14497.6	--	14497.6

Ship Construction, Navy funding for the program includes construction, outfitting, and post-delivery requirements for LCS.

Cost Quantity Information		
1611 Procurement Shipbuilding and Conversion, Navy		
Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned With Quantity) BY 2010 \$M
2009	2	1402.5
2010	2	1154.7
2011	2	1116.7
2012	4	1808.1
2013	4	1729.7
2014	4	1706.3
2015	3	1364.6
2016	3	1295.8
2017	3	1405.4
2018	2	974.7
2019	1	539.1
2020	--	--
2021	--	--
2022	--	--
2023	--	--
2024	--	--
2025	--	--
Subtotal	30	14497.6

Annual Funding 1205 MILCON Military Construction, Navy and Marine Corps		
Fiscal Year	TY \$M	
	Total Program	
	2013	59.5
	2014	16.1
	2015	22.5
	2016	55.6
	2017	--
	2018	1.9
	2019	111.5
Subtotal		267.1

Annual Funding 1205 MILCON Military Construction, Navy and Marine Corps		
Fiscal Year	BY 2010 \$M	
	Total Program	
2013		54.5
2014		14.5
2015		19.8
2016		48.2
2017		--
2018		1.6
2019		91.3
Subtotal		229.9

PB 2019 MILCON is for LCS Support Facility and LCS Operational Training Facility projects. The facilities support efforts beyond operational crew training and include LCS Squadron Command staff and Fleet Operations. Due to the nature of the funding and the multi-purpose function of the facility, it is not possible to separate funds as LCS Seaframe-specific.

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	2/18/2011	5/29/2016
Approved Quantity	24	28
Reference	Milestone B ADM	LCS 2017 Acquisition Strategy
Start Year	2005	2005
End Year	2015	2017

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the Milestone B decision that includes the ships through FY 2015, and subsequent extension, in order to cover the LCS Seaframe program requirements.

Foreign Military Sales

Country	Date of Sale	Quantity	Total Cost \$M	Description
Saudi Arabia	5/25/2017	4	6027.6	FMS Case SR-P-SBV: The sale of the Multi-Mission Surface Combatant (MMSC), ordnance, training, testing, sparing, and infrastructure.

Notes

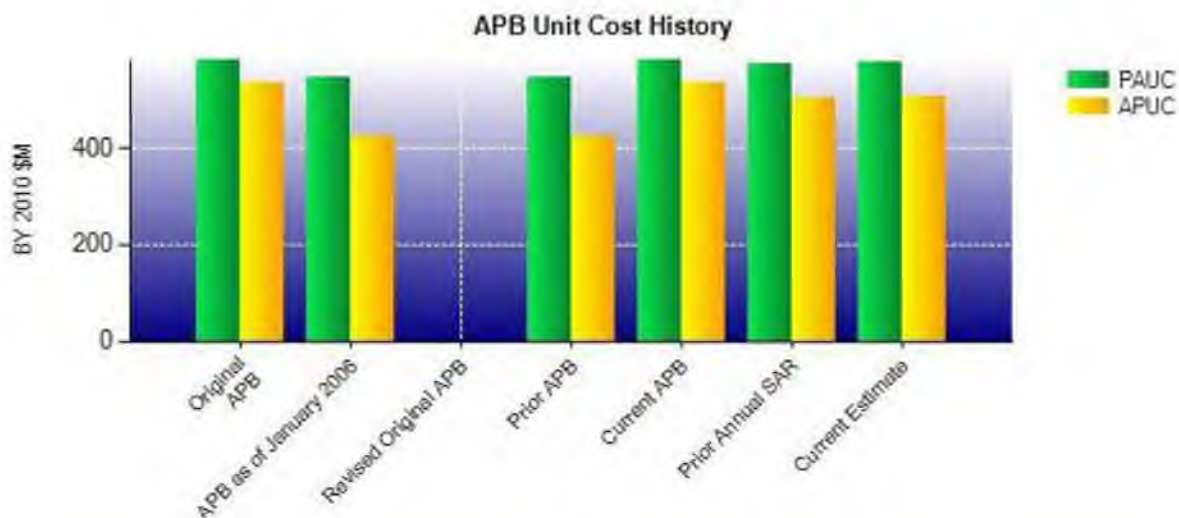
Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2010 \$M	BY 2010 \$M	% Change
	Current UCR Baseline (Apr 2011 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	32011.0	18504.2	
Quantity	55	32	
Unit Cost	582.018	578.256	-0.65
Average Procurement Unit Cost			
Cost	28369.2	15222.2	
Quantity	53	30	
Unit Cost	535.268	507.407	-5.21

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2010 \$M	BY 2010 \$M	% Change
	Original UCR Baseline (Apr 2011 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	32011.0	18504.2	
Quantity	55	32	
Unit Cost	582.018	578.256	-0.65
Average Procurement Unit Cost			
Cost	28369.2	15222.2	
Quantity	53	30	
Unit Cost	535.268	507.407	-5.21



APB Unit Cost History					
Item	Date	BY 2010 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Apr 2011	582.018	535.268	680.705	636.236
APB as of January 2006	May 2004	547.200	424.450	502.925	400.000
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	May 2004	547.200	424.450	502.925	400.000
Current APB	Apr 2011	582.018	535.268	680.705	636.236
Prior Annual SAR	Dec 2016	572.325	500.517	657.903	590.727
Current Estimate	Dec 2017	578.256	507.407	663.297	597.453

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
680.705	80.034	-41.470	34.622	49.531	-140.125	0.000	0.000	-17.408	663.297

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
636.236	84.340	-78.330	41.143	54.247	-140.183	0.000	0.000	-38.783	597.453

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone A	May 2004	May 2004	N/A	May 2004
Milestone B	Jan 2007	Feb 2011	N/A	Feb 2011
Milestone C	Dec 2010	Jan 2012	N/A	Jan 2012
IOC	Oct 2007	Jan 2014	N/A	Apr 2014
Total Cost (TY \$M)	1211.7	37438.8	N/A	21225.5
Total Quantity	2	55	N/A	32
PAUC	605.850	680.705	N/A	663.297

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	3481.7	33720.5	236.6	37438.8
Previous Changes				
Economic	+25.7	+2601.2	+7.5	+2634.4
Quantity	--	-16983.3	--	-16983.3
Schedule	-108.9	+1234.3	-17.5	+1107.9
Engineering	-42.4	+1627.4	--	+1585.0
Estimating	-302.2	-4478.3	+50.6	-4729.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-427.8	-15998.7	+40.6	-16385.9
Current Changes				
Economic	-0.8	-71.0	-1.5	-73.3
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-18.3	+272.8	-8.6	+245.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-19.1	+201.8	-10.1	+172.6
Total Changes	-446.9	-15796.9	+30.5	-16213.3
Current Estimate	3034.8	17923.6	267.1	21225.5

Summary BY 2010 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	3433.3	28369.2	208.5	32011.0
Previous Changes				
Economic	--	--	--	--
Quantity	--	-11920.9	--	-11920.9
Schedule	-75.8	+870.5	-12.5	+782.2
Engineering	-32.5	+1196.1	--	+1163.6
Estimating	-255.5	-3499.4	+33.4	-3721.5
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-363.8	-13353.7	+20.9	-13696.6
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-17.4	+206.7	+0.5	+189.8
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-17.4	+206.7	+0.5	+189.8
Total Changes	-381.2	-13147.0	+21.4	-13506.8
Current Estimate	3052.1	15222.2	229.9	18504.2

Previous Estimate: December 2016

RDT&E		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-0.8
Revised estimate due to the reduction of ship test support required for Mission Package testing (FY 2019 - FY 2021). (Estimating)		-2.6	-3.0
Revised estimate to reflect actuals. (Estimating)		-15.5	-16.2
Revised estimate due to update in economic assumptions and incorporation of Navy Working Capital Fund adjustments. (Estimating)		-0.6	-0.6
Revised estimate for LCS training requirements in FY 2023. (Estimating)		+0.8	+1.0
Adjustment for current and prior escalation. (Estimating)		+0.5	+0.5
RDT&E Subtotal		-17.4	-19.1

Procurement		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-71.0
Revised estimate due to update in economic assumptions and incorporation of Navy Working Capital Fund adjustments (Ship Construction, Navy (SCN)). (Estimating)		+1.6	+2.3
Revised estimate for the addition of Cost to Complete budget for FY 2015 - FY 2017 LCS Seaframes (SCN). (Estimating)		+37.2	+50.5
Revised estimate to adjust for post delivery requirements and phasing (SCN). (Estimating)		+56.3	+80.0
Revised estimate due to update in economic assumptions and incorporation of Navy Working Capital Fund adjustments (Other Procurement, Navy (OPN)). (Estimating)		-1.2	-1.4
Revised estimate to reflect actuals (OPN). (Estimating)		-3.5	-3.7
Revised estimate for LCS Class support equipment requirements (OPN). (Estimating)		+21.0	+29.8
Revised estimate to increase training system development and capacity (OPN). (Estimating)		+49.1	+59.0
Revised estimate for LCS Seaframe habitability modifications and safety changes (OPN). (Estimating)		+2.6	+3.2
Adjustment for current and prior escalation. (Estimating)		+43.6	+53.1
Procurement Subtotal		+206.7	+201.8

MILCON		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-1.5
Revised estimate for proper pricing of facility construction requirements. (Estimating)		+0.1	-9.0
Adjustment for current and prior escalation. (Estimating)		+0.4	+0.4
MILCON Subtotal		+0.5	-10.1

(U//FOUO) Contracts**(U//FOUO) Contract Identification**

Appropriation: Procurement
Contract Name: Construction - LCS 13
Contractor: Lockheed Martin
Contractor Location: 2323 Eastern Boulevard
 Middle River, MD 21220
Contract Number: N00024-11-C-2300/5
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: March 04, 2013
Definitization Date: March 04, 2013

(U//FOUO) Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
351.5	402.2	1	(b)(4)		1	(b)(4)	

(U//FOUO) Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the execution of change order budget on the contract.

(U//FOUO) Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/24/2017)		(b)(4)
Previous Cumulative Variances		
Net Change		

(U//FOUO) Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to production inefficiencies in the post-launch stage of production and ship preparation for trials.

The favorable net change in the schedule variance is due to timely completion of machinery alignment and preparation for ship light off events.

(U//FOUO) Notes

Current Contract Price (\$M), Estimated Price at Completion (\$M) and Cost and Schedule Variance for this contract is ~~For Official Use Only - Exempt from E.O. 1.35 release under 5 U.S.C. 552(b)(7)(D)~~

This contract is more than 90% complete; therefore, this is the final report for this contract.

As the LCS Program is currently engaged in a source selection process, if released, the information contained in the Current Contract Price, Estimated Price at Completion, and Cost and Schedule Variances would result in competitive harm to the companies.

(U//FOUO) Contract Identification

Appropriation: Procurement
Contract Name: Construction - LCS 15
Contractor: Lockheed Martin
Contractor Location: 2323 Eastern Boulevard
 Middle River, MD 21220
Contract Number: N00024-11-C-2300/6
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: March 04, 2013
Definitization Date: March 04, 2013

(U//FOUO) Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
343.3	393.1	1	(b)(4)		1	(b)(4)	

(U//FOUO) Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the execution of change order budget on the contract.

(U//FOUO) Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/24/2017)		(b)(4)
Previous Cumulative Variances		
Net Change		

(U//FOUO) Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to production inefficiencies in the post-launch stage of production.

The unfavorable net change in the schedule variance is due to late completion of work packages in the post-launch stage of production.

(U//FOUO) Notes

Current Contract Price (\$M), Estimated Price at Completion (\$M) and Cost and Schedule Variance for this contract is For Official Use Only - exempt from E.O. 13526 release under 5 U.S.C. 552(b)(7)(D)

As the LCS Program is currently engaged in a source selection process, if released, the information contained in the Current Contract Price, Estimated Price at Completion, and Cost and Schedule Variances would result in competitive harm to the companies.

(U//FOUO) Contract Identification

Appropriation: Procurement
Contract Name: Construction - LCS 16
Contractor: Austal USA
Contractor Location: 1 Dunlap Drive
 Mobile, AL 36602
Contract Number: N00024-11-C-2301/6
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: March 04, 2013
Definitization Date: March 04, 2013

(U//FOUO) Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
340.2	373.5	1	(b)(4)		1	(b)(4)	

(U//FOUO) Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the execution of change order budget on the contract.

(U//FOUO) Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)		(b)(4)
Previous Cumulative Variances		
Net Change		

(U//FOUO) Cost and Schedule Variance Explanations

The unfavorable cumulative cost variance is due to ship preparation for trials.

The unfavorable cumulative schedule variance is due to completion of testing in preparation for trials.

(U//FOUO) Notes

Current Contract Price (\$M), Estimated Price at Completion (\$M), and Cost and Schedule Variance for this contract is For Official Use Only - ~~Exempt from CIA release under E.O. 13526(b)(1)~~

This contract is more than 90% complete; therefore, this is the final report for this contract.

As the LCS Program is currently engaged in a source selection process, if released, the information contained in the Current Contract Price, Estimated Price at Completion, and Cost and Schedule Variances would result in competitive harm to the companies.

(U//FOUO) Contract Identification

Appropriation: Procurement
Contract Name: Construction - LCS 17
Contractor: Lockheed Martin
Contractor Location: 2323 Eastern Boulevard
 Middle River, MD 21220
Contract Number: N00024-11-C-2300/7
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: March 10, 2014
Definitization Date: March 10, 2014

(U//FOUO) Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
353.5	404.7	1	(b)(4)		1	(b)(4)	

(U//FOUO) Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the execution of change order budget on the contract.

(U//FOUO) Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/24/2017)		(b)(4)
Previous Cumulative Variances		
Net Change		

(U//FOUO) Cost and Schedule Variance Explanations

The favorable cumulative cost variance is due to material procurement.

The unfavorable cumulative schedule variance is due to inefficiencies prior to launch.

(U//FOUO) Notes

Current Contract Price (\$M), Estimated Price at Completion (\$M), and Cost and Schedule Variance for this contract is For Official Use Only - Exempt from release under 5 U.S.C. 552(b)(1)

As the LCS Program is currently engaged in a source selection process, if released, the information contained in the Current Contract Price, Estimated Price at Completion, and Cost and Schedule Variances would result in competitive harm to the companies.

(U//FOUO) Contract Identification

Appropriation: Procurement
Contract Name: Construction - LCS 18
Contractor: Austal USA
Contractor Location: 1 Dunlap Drive
 Mobile, AL 36602
Contract Number: N00024-11-C-2301/7
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: March 10, 2014
Definitization Date: March 10, 2014

(U//FOUO) Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
341.6	375.1	1	(b)(4)		1	(b)(4)	

(U//FOUO) Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the execution of change order budget on the contract.

(U//FOUO) Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)		(b)(4)
Previous Cumulative Variances		
Net Change		

(U//FOUO) Cost and Schedule Variance Explanations

The unfavorable cumulative cost variance is due to production inefficiencies in the post-launch stage of production.

The unfavorable cumulative schedule variance is due to the late completion of work packages in the post-launch stage of production.

(U//FOUO) Notes

Current Contract Price (\$M), Estimated Price at Completion (\$M), and Cost and Schedule Variance for this contract is For Official Use Only - ~~Exempt from release under E.O. 13526 (b)(7).~~

As the LCS Program is currently engaged in a source selection process, if released, the information contained in the Current Contract Price, Estimated Price at Completion, and Cost and Schedule Variances would result in competitive harm to the companies.

(U//FOUO) Contract Identification

Appropriation: Procurement
Contract Name: Construction - LCS 19
Contractor: Lockheed Martin
Contractor Location: 2323 Eastern Boulevard
 Middle River, MD 21220
Contract Number: N00024-11-C-2300/8
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: March 10, 2014
Definitization Date: March 10, 2014

(U//FOUO) Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
344.4	394.5	1	(b)(4)		1	(b)(4)	

(U//FOUO) Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the execution of change order budget on the contract.

(U//FOUO) Contract Variance

Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/24/2017)		(b)(4)
Previous Cumulative Variances		
Net Change		

(U//FOUO) Cost and Schedule Variance Explanations

The favorable cumulative cost variance is due to material procurement.

The unfavorable cumulative schedule variance is due to inefficiencies in the module erection phase of construction.

(U//FOUO) Notes

Current Contract Price (\$M), Estimated Price at Completion (\$M), and Cost and Schedule Variance for this contract is For Official Use Only - ~~UNCLASSIFIED//FOR OFFICIAL USE ONLY~~

As the LCS Program is currently engaged in a source selection process, if released, the information contained in the Current Contract Price, Estimated Price at Completion, and Cost and Schedule Variances would result in competitive harm to the companies.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	2	2	2	100.00%
Production	9	9	30	30.00%
Total Program Quantity Delivered	11	11	32	34.38%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	21225.5	Years Appropriated	16
Expended to Date	12787.1	Percent Years Appropriated	69.57%
Percent Expended	60.24%	Appropriated to Date	18918.9
Total Funding Years	23	Percent Appropriated	89.13%

The above data is current as of February 12, 2018.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	February 08, 2018
Source of Estimate:	POE
Quantity to Sustain:	32
Unit of Measure:	Ship
Service Life per Unit:	25.00 Years
Fiscal Years in Service:	FY 2009 - FY 2044

Costs are incurred in preparation for and after the fielding of each LCS Seaframe. O&S cost estimate assumes:

- a) Crews:
60 crews: 50 personnel (8 Officers, 42 Enlisted)
- b) Steaming hours underway/not underway:
4421 hours underway / 718 hours not underway per year
- c) Defense Logistics Agency Acquisition Price of Fuel (CY 2010) \$112.56/barrel
- d) Government Furnished Equipment and Contractor Furnished Equipment systems are based on the configuration decisions made during ship design and construction
- e) Reflects 32 LCS consistent with PB 2019
- f) O&S costs for LCS Mission Modules not included in the O&S estimate shown in the LCS SAR.

Sustainment Strategy

The PEO LCS Fleet Introduction and Sustainment branch is responsible for the operation, maintenance, and support of the LCS Seaframe systems.

Sustainment execution includes maintenance execution planning, planned and emergent maintenance; planning for scheduled availabilities, facilities maintenance; fly-away support; modernization and engineering support services of LCS ships homeported in San Diego, California, Mayport, Florida, and deploying worldwide. Full transition to In-Service sustainment under a Product Support Plan is ongoing.

Antecedent Information

No Antecedent.

LCS is a focused-mission, modular, surface combatant. LCS is smaller than a Frigate (FFG) but larger than a Patrol Coastal (PC) ship or Mine Countermeasures (MCM) ship. A LCS Seaframe with an embarked Mission Package (MP) allows the Navy to conduct most missions currently performed by a PC, MCM, or FFG, dependent on which MP is embarked. While parts of each of these platforms are potentially analogous, none are truly comparable.

LCS are minimally manned, and shore support is required to manage some functions traditionally assigned to ship's force. Shore personnel are required to support LCS administrative functions, supply support, training, and ship specific

preventive maintenance. Additionally, the LCS concept of operations and fleet requirements call for greater deployed time than other ship classes, allowed by rotational crewing. While the LCS provides the Fleet some of the capabilities currently provided by the FFG, PC and MCM classes; the LCS Seaframe cannot be compared to any one class discretely.

Today, the LCS Seaframe with one embarked MP is designed to enhance the Fleet's current anti-submarine capabilities, exceed current Fleet MCM capabilities, and fulfill current surface warfare capability gaps. The associated mission capabilities provided by the MPs are managed and reported on by the LCS Mission Module program office. As an example; the LCS Mission Module program office is responsible for developing, integrating, and testing the MCM MP for LCS. The MCM MP is comprised of various mission systems, an MH-60 Helicopter, a Vertical Take-off & Landing Unmanned Aerial Vehicle (VTUAV), support equipment, support containers, mission package computing, and a crew. As such, the LCS Mission Module program office is responsible for managing and reporting on the acquisition of the MCM MP for the Navy.

The LCS Seaframe's organic mission capability cannot be directly compared on a cost by cost basis to any other current ship program due to operational and mission capability differences as well as how costs are captured and reported.

Annual O&S Costs BY2010 \$M		
Cost Element	Littoral Combat Ship (LCS) Average Annual Cost Per Ship	No Antecedent (Antecedent)
Unit-Level Manpower	10.626	--
Unit Operations	10.056	--
Maintenance	18.051	--
Sustaining Support	4.163	--
Continuing System Improvements	10.391	--
Indirect Support	5.156	--
Other	--	--
Total	58.443	--

Item	Total O&S Cost \$M		
	Littoral Combat Ship (LCS)		No Antecedent (Antecedent)
	Current Development APB Objective/Threshold	Current Estimate	
Base Year	50479.0	55526.9	46754.6
Then Year	87089.3	N/A	65532.3

Disposal Cost is included in the Operating and Support Cost of the current APB objective and threshold for this program.

Current Development APB is for 55 LCS. The O&S cost estimate reflects the current estimate for the 32 LCS program.

Equation to Translate Annual Cost to Total Cost

Total O&S Cost = Average Annual Cost per Ship * Number of Ships * Service Life per Ship

Total O&S Cost = \$58.4433M * 32 * 25 = \$46,754.6M

O&S Cost Variance		
Category	BY 2010	Change Explanations

	\$M	
Prior SAR Total O&S Estimates - Dec 2016 SAR	46746.8	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	0.0	
Cost Data Update	7.8	Updated PB 2019 escalation indices
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	7.8	
Current Estimate	46754.6	

Disposal Estimate Details

Date of Estimate: February 08, 2018
Source of Estimate: POE
Disposal/Demilitarization Total Cost (BY 2010 \$M): Total costs for disposal of all Ship are 89.4

There is no change in disposal cost from the 2016 SAR.