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

Littoral Combat Ship (LCS)

As of FY 2021 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

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)
USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)

Program Information

Program Name
Littoral Combat Ship (LCS)

DoD Component
Navy

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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 2019, the LCS Program continued to validate and deliver capability for combat-ready ships to the Fleet. Each LCS variant has achieved IOC and 35 LCS Seaframes have been awarded to date: 21 have delivered to the Navy, 10 are in various stages of production, and four 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.

In 2019, LCS 15, LCS 17, and LCS 20 delivered to the Navy. LCS 19 and LCS 22 delivered in February 2020.

LCS 9, LCS 12 and LCS 14 transitioned to sustainment in 2019. A total of twelve LCS have transitioned to sustainment to date: LCS 1 through LCS 10, LCS 12, and LCS 14. LCS 11, LCS 13, LCS 16, and LCS 18 are planned to transition to sustainment in 2020.

LCS 21, and LCS 23 through LCS 30, and LCS 32 are in various stages of production.

LCS 31, LCS 34, LCS 36, and LCS 38 are in pre-production status.

On January 15, 2019 the Navy awarded the remaining FY 2019 LCS (LCS 31) to Lockheed Martin. All LCS ships have been awarded and are on contract. FY 2019 was the final year programmed for LCS. The total program estimate reflected in this SAR represents the costs of 35 budgeted LCS.

LCS has delivered the last 13 ships with zero starred cards open at delivery and is achieving outstanding Board of Inspection & Survey (INSURV) Figure of Merit scores from the Navy's INSURV team.

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 included in the FYDP as submitted in PB 2021. 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 2019, the Program completed Live Fire Test and Evaluation (LFT&E) analysis and documentation and submitted the LCS Final Survivability Assessment Report (FSAR) to the Director, Operational Test and Evaluation (DOT&E).

In 2019, the LCS program conducted Combat System Ship Qualification Test (CSSQT) events on LCS 11, LCS 13, LCS 14, LCS 16, and LCS 18. 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 Testand 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.
March 2018	USD(A&S) approved a revised LCS Acquisition Strategy on March 28, 2018 authorizing the Navy to procure three ships in FY 2018 and FY 2019 as authorized by Congress.
December 2018	USD(A&S) memo of December 19, 2018 delegated MDA for LCS from USD(A&S) to ASN (RD&A)
January 2019	On January 15, 2019 the Navy awarded the remaining FY 2019 LCS. All LCS ships have been awarded and are on contract. FY 2019 was the final year programmed for LCS with a 35 ship program total.
April 2019	In April 2019, the Final Survivability Assessment Report was approved which completed the Survivability/Live Fire Test & Evaluation program for LCS.

Threshold Breaches

APB Breaches		
Schedule		☑
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

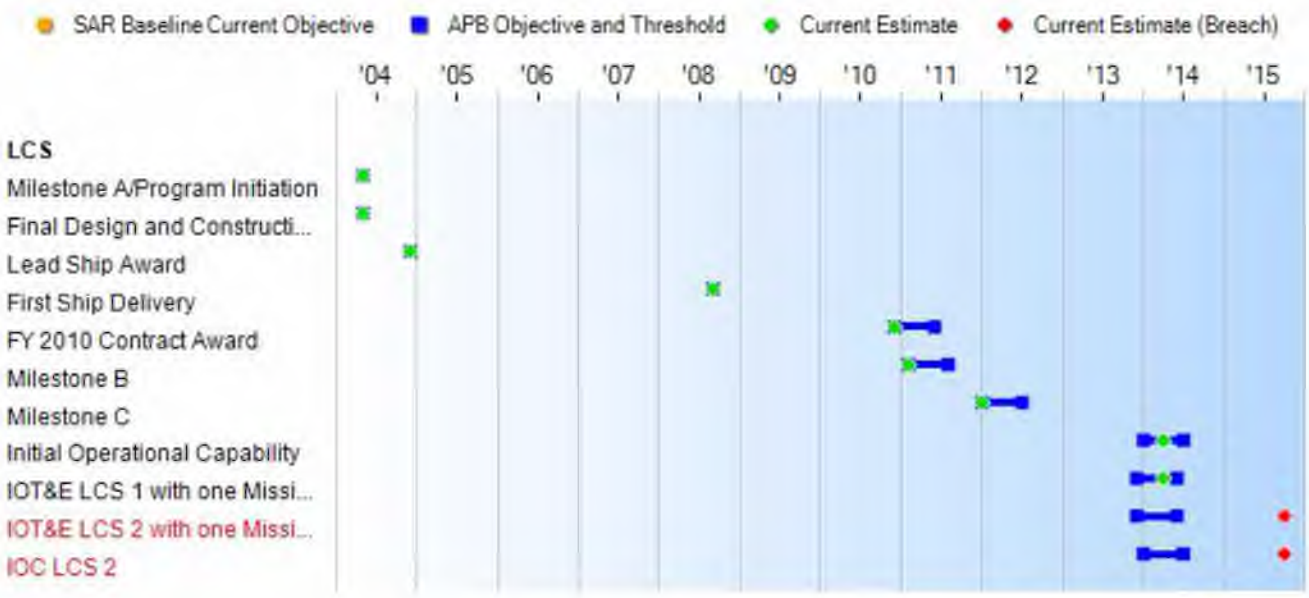
Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

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 though 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.

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 and Obligation Work Limiting Dates of Ships Currently Authorized or Under Construction:

LCS 11 - Aug 2018 / May 2020

LCS 13 - Aug 2018 / Mar 2020

LCS 15 - Feb 2019 / Jan 2021

LCS 16 - Apr 2018 / Jun 2020

LCS 17 - Jul 2019 / Apr 2021

LCS 18 - Aug 2018 / Sep 2020

LCS 19 - Feb 2020 / Dec 2021

LCS 20 - Jun 2019 / Nov 2020

LCS 21 - Oct 2020 / Jul 2022

LCS 22 - Feb 2020 / May 2021

LCS 23 - Feb 2021 / Sep 2022

LCS 24 - Apr 2020 / Dec 2021

LCS 25 - Aug 2021 / Jan 2023

LCS 26 - Oct 2020 / Jun 2022

LCS 27 - Jul 2022 / Nov 2023

LCS 28 - Jun 2021 / Jan 2023

LCS 29 - Jan 2023 / Jul 2024

LCS 30 - Dec 2021 / Aug 2023

LCS 31 - Jan 2024 / Sep 2025

LCS 32 - Jul 2022 / Feb 2024

LCS 34 - Jan 2023 / Aug 2024

LCS 36 - Jul 2023 / Mar 2025

LCS 38 - Jan 2024 / Sep 2025

The above delivery dates are consistent with the PB21 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	38.7 / 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, authenticat-ion, confidential-ity, 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,	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,

nonrepudiat-ion, 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, authenticat-ion, confidential-ity, and nonrepudiat-ion, 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, authenticat-ion, confidential-ity, and nonrepudiat-ion, and issuance of an IATO 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, authenticat-ion, confidential-ity, and nonrepudiat-ion, 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

None

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 2021, FY 2020 Other Procurement, Navy (OPN) PE 0204230N, Line Item (LI) 5664 and LI 0944 funds identified as being LCS Seaframe-specific are not part of the LCS Seaframe acquisition program and are accounted for in Operations and Sustainment beginning in FY 2021.

PB 2021 Weapons Procurement, Navy (WPN) LI 2992 funds identified as being LCS Seaframe-specific are not part of the LCS Seaframe acquisition program.

RDT&E

Appn	BA	PE
Navy	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	02	0204230N

Line Item	Name	
2127	Littoral Combat Ship	(Sunk)
Notes:	Littoral Combat Ship Construction	

Appn	BA	PE
Navy	05	0204230N

Line Item	Name	
5110	Outfitting	(Shared)
Notes:	All new construction ship building programs	
5300	Completion of Prior Year Shipbuilding Programs	(Shared)
Notes:	Aircraft Carriers and Ships	

Appn	BA	PE
Navy	01	0204230N

Line Item	Name		
0944	LCS Class Equipment	(Shared)	(Sunk)
Notes:	Ships		

1320	Other Ship Training Equipment	(Shared)	(Sunk)
1604	LCS In-Service Modernization		(Sunk)

Navy 1810 04 0204230N

Line Item	Name		
5664	Surface Training Equipment	(Shared)	(Sunk)

Notes: Aircraft Carriers, IWS, and Ships

MILCON

Appn	BA	PE
Navy	1205 01	0203176N

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

Navy 1205 01 0212176N

Project	Name		
63005970	LCS Ship Maintenance Support Facility		(Sunk)

Navy 1205 01 0815976N

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

Navy 1205 03 0901211N

Project	Name		
64482044	MCON Design Funds	(Shared)	(Sunk)

Navy 1205 01 0911376N

Project	Name		
60201426	LCS Support Facility		(Sunk)

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	3066.4	3481.7	3481.7	3053.1
Procurement	28369.2	28369.2	31206.1	15982.8	33720.5	33720.5	19090.9
Flyaway	--	--	--	15982.8	--	--	19090.9
Recurring	--	--	--	15982.8	--	--	19090.9
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	228.3	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	19277.5	37438.8	37438.8	22411.1

Cost Notes

CAPE Cost Risks: FY 2019 was the last year for LCS procurement. PB 2021 presents risk related to the potential contraction of the Small Surface Combatant industrial base with the last LCS procured in FY 2019.

A Program Office Estimate was completed for the LCS program in 2019. The Total Program Cost Estimate detailed above represents the cost for the 35 LCS program.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	2	2	2
Procurement	53	53	33
Total	55	55	35

Quantity Notes

The estimate reflected in this SAR represents the costs for the 35 LCS program only.

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2021 President's Budget / December 2019 SAR (TY$ M)									
Appropriation	Prior	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
RDT&E	3030.0	9.9	8.3	1.6	1.4	0.9	1.0	0.0	3053.1
Procurement	18090.3	221.1	182.4	152.0	162.9	147.5	134.7	0.0	19090.9
MILCON	267.1	0.0	0.0	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 2021 Total	21387.4	231.0	190.7	153.6	164.3	148.4	135.7	0.0	22411.1
PB 2020 Total	21419.8	238.7	231.0	210.3	231.3	211.9	165.5	0.0	22708.5
Delta	-32.4	-7.7	-40.3	-56.7	-67.0	-63.5	-29.8	0.0	-297.4

Quantity Summary										
FY 2021 President's Budget / December 2019 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Development	2	0	0	0	0	0	0	0	0	2
Production	0	33	0	0	0	0	0	0	0	33
PB 2021 Total	2	33	0	0	0	0	0	0	0	35
PB 2020 Total	2	33	0	0	0	0	0	0	0	35
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	--	--	--	--	--	--	49.3
2019	--	--	--	--	--	--	36.9
2020	--	--	--	--	--	--	9.9
2021	--	--	--	--	--	--	8.3
2022	--	--	--	--	--	--	1.6
2023	--	--	--	--	--	--	1.4
2024	--	--	--	--	--	--	0.9
2025	--	--	--	--	--	--	1.0
Subtotal	2	--	--	--	--	--	3053.1

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	--	--	--	--	--	--	158.1
2014	--	--	--	--	--	--	152.8
2015	--	--	--	--	--	--	73.1
2016	--	--	--	--	--	--	98.0
2017	--	--	--	--	--	--	44.7
2018	--	--	--	--	--	--	42.4
2019	--	--	--	--	--	--	31.1
2020	--	--	--	--	--	--	8.2
2021	--	--	--	--	--	--	6.7
2022	--	--	--	--	--	--	1.3
2023	--	--	--	--	--	--	1.1
2024	--	--	--	--	--	--	0.7
2025	--	--	--	--	--	--	0.7
Subtotal	2	--	--	--	--	--	3066.4

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	--	--	62.1	--	62.1	--	62.1
2019	--	--	135.2	--	135.2	--	135.2
2020	--	--	50.5	--	50.5	--	50.5
Subtotal	--	--	548.2	--	548.2	--	548.2

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	--	--	30.8	--	30.8	--	30.8
2016	--	--	74.3	--	74.3	--	74.3
2017	--	--	57.3	--	57.3	--	57.3
2018	--	--	53.0	--	53.0	--	53.0
2019	--	--	113.2	--	113.2	--	113.2
2020	--	--	41.5	--	41.5	--	41.5
Subtotal	--	--	478.3	--	478.3	--	478.3

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	1689.4	--	--	1689.4	--	1689.4
2016	3	1603.1	--	--	1603.1	--	1603.1
2017	3	1807.1	--	--	1807.1	--	1807.1
2018	3	1730.8	--	--	1730.8	--	1730.8
2019	3	1807.9	--	--	1807.9	--	1807.9
2020	--	170.6	--	--	170.6	--	170.6
2021	--	182.4	--	--	182.4	--	182.4
2022	--	152.0	--	--	152.0	--	152.0
2023	--	162.9	--	--	162.9	--	162.9
2024	--	147.5	--	--	147.5	--	147.5
2025	--	134.7	--	--	134.7	--	134.7
Subtotal	33	18542.7	--	--	18542.7	--	18542.7

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	1069.5	--	--	1069.5	--	1069.5
2012	4	1512.2	--	--	1512.2	--	1512.2
2013	4	1540.6	--	--	1540.6	--	1540.6
2014	4	1574.3	--	--	1574.3	--	1574.3
2015	3	1398.8	--	--	1398.8	--	1398.8
2016	3	1300.0	--	--	1300.0	--	1300.0
2017	3	1435.3	--	--	1435.3	--	1435.3
2018	3	1346.9	--	--	1346.9	--	1346.9
2019	3	1379.4	--	--	1379.4	--	1379.4
2020	--	127.6	--	--	127.6	--	127.6
2021	--	133.8	--	--	133.8	--	133.8
2022	--	109.3	--	--	109.3	--	109.3
2023	--	114.8	--	--	114.8	--	114.8
2024	--	101.9	--	--	101.9	--	101.9
2025	--	91.3	--	--	91.3	--	91.3
Subtotal	33	15504.5	--	--	15504.5	--	15504.5

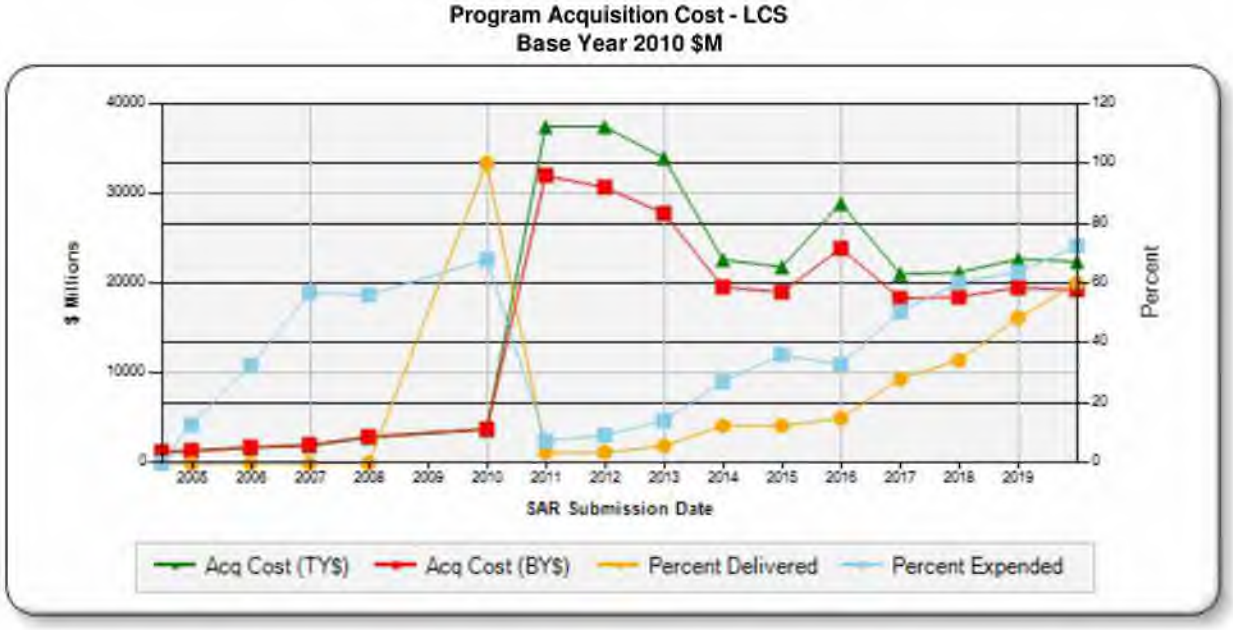
Cost Quantity Information 1611 | Procurement | Shipbuilding and Conversion, Navy		
Fiscal Year	**Quantity**	**End Item Recurring Flyaway (Aligned With Quantity) BY 2010 $M**
2009	2	1402.1
2010	2	1160.6
2011	2	1116.5
2012	4	1796.2
2013	4	1708.1
2014	4	1684.3
2015	3	1351.1
2016	3	1284.0
2017	3	1367.0
2018	3	1317.5
2019	3	1317.1
2020	--	--
2021	--	--
2022	--	--
2023	--	--
2024	--	--
2025	--	--
Subtotal	33	15504.5

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	54.4
2014	14.5
2015	19.8
2016	47.9
2017	--
2018	1.6
2019	90.1
Subtotal	228.3

Charts

LCS first began SAR reporting in June 2004



2004 - 2009 SARs reported Flight 0 RDT&E only in accordance with Section 2432, Title 10, U.S. Code.

2010 SAR reported 55 LCS in accordance with April 2011 Milestone B approved APB.

2012 SAR reported 52 LCS in accordance with 2012 Force Structure Assessment for 52 LCS.

2013 SAR reported 32 LCS in accordance with February 4, 2014 Secretary of Defense (SECDEF) Memo directing that "no new contract negotiations beyond 32 ships will go forward."

2015 SAR reported 40 ships (29 LCS/11 Frigate) consistent with PB 2017, in accordance with December 14, 2015 the SECDEF Memo directing that the Navy build a total of 40 LCS and Frigates, and down-select to one variant in FY 2019.

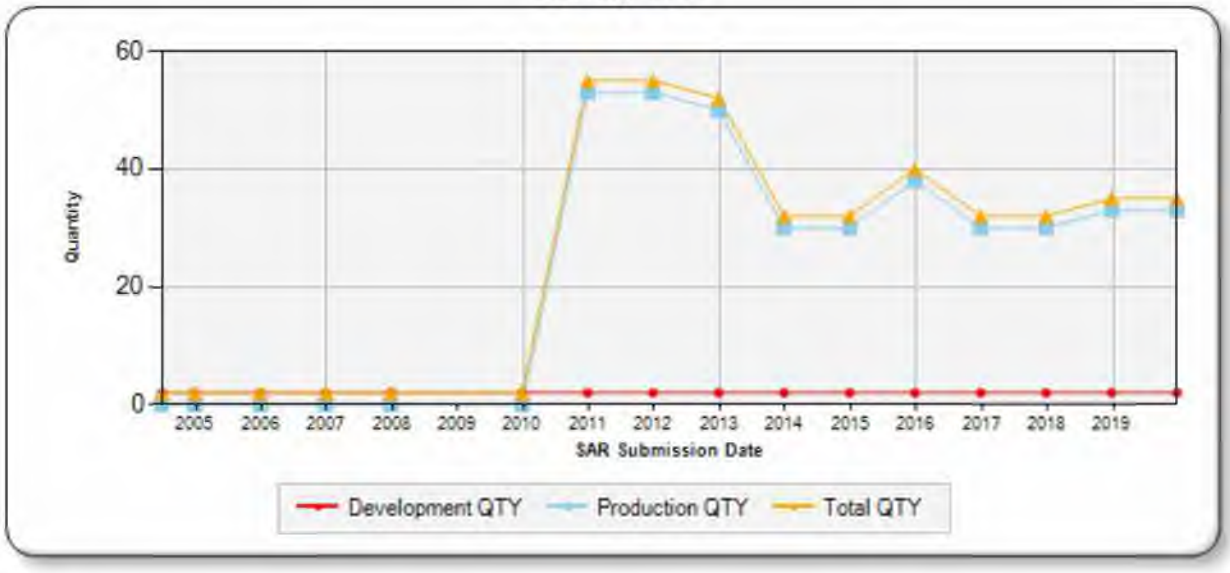
2016 SAR reporting 32 LCS, an increase of 3 LCS from the December 2015 SAR, consistent with PB 2018 and supporting transition to a Frigate in FY 2020.

2017 SAR reporting 32 LCS, consistent with PB 2019.

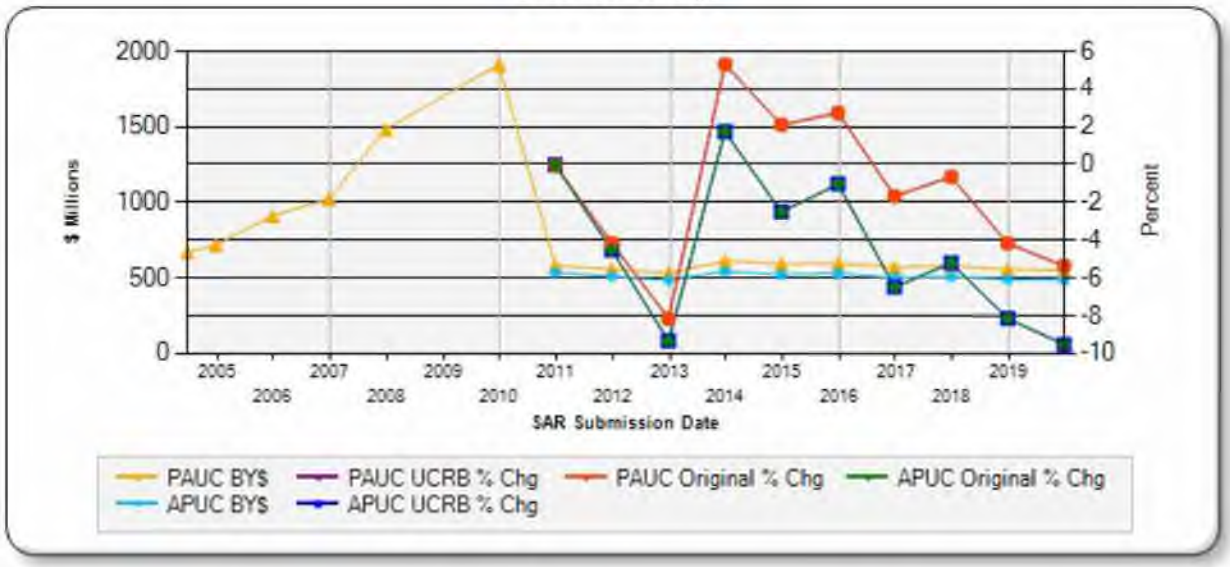
2018 SAR reporting 35 LCS, consistent with the number of LCS authorized by Congress, three in FY 2018, three in FY 2019.

2019 SAR reporting 35 LCS, consistent with total program quantity.

Quantity - LCS



Unit Cost - LCS
Base Year 2010 $M



Risks

Significant Schedule and Technical Risks

Significant Schedule and Technical Risks	
Milestone B (February 2011)	
1.	Cost: Performing to the aggressive competitively awarded fixed price contracts.
2.	Schedule: Delivering complete ships on time to support contract and fleet requirements
3.	Performance: Achieving Initial Operational Test and Evaluation on each variant with one mission package
Current Estimate (December 2019)	
1.	PB 2021 cost estimate supports completion of LCS Program of record.
2.	PB 2021 presents risk related to the potential contraction of the Small Surface Combatant industrial base with the last LCS procurred in FY 2019.
3.	No current schedule or technical risk.

Risks

Risk and Sensitivity Analysis

Risks and Sensitivity Analysis	
Current Baseline Estimate (April 2011)	
1.	Current Baseline Estimate is the same as the Original Baseline Estimate.
Original Baseline Estimate (April 2011)	
1.	Navy accepted full funding responsibility in accordance with the Service Cost Position policy in support of the FY 2010 – FY 2015 Dual Block Buy Awards.
Revised Original Estimate (N/A)	
None	
Current Procurement Cost (December 2019)	
1.	PB 2021 cost estimate supports completion of LCS Program of record.
2.	PB 2021 presents risk related to the potential contraction of the Small Surface Combatant industrial base with the last LCS procured in FY 2019.
3.	No current schedule or technical risks.

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	2/18/2011	3/28/2018
Approved Quantity	24	35
Reference	Milestone B ADM	LCS 2018 Acquisition Strategy
Start Year	2005	2005
End Year	2015	2019

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

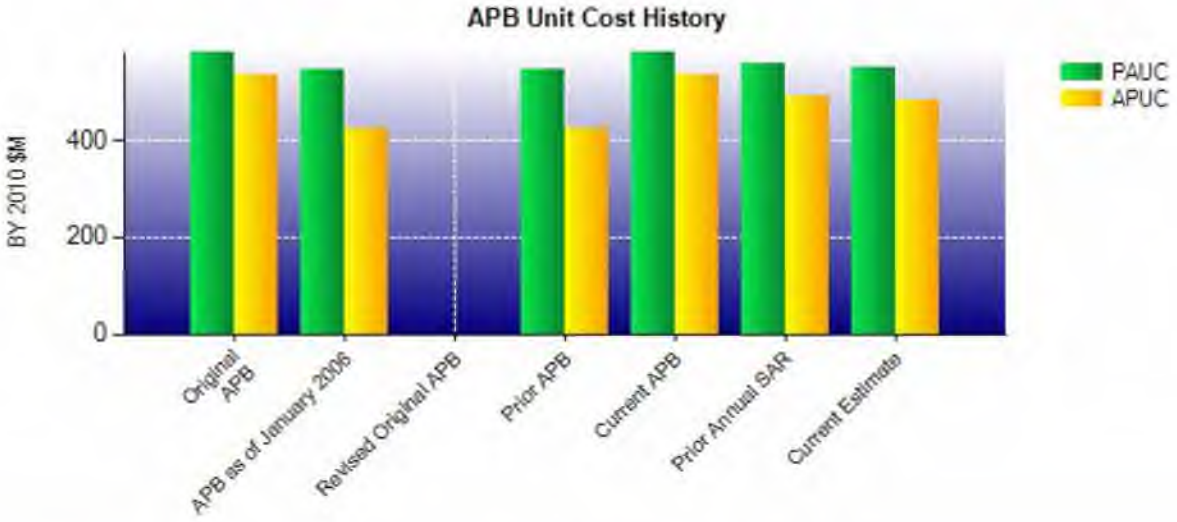
Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2010 $M Current UCR Baseline (Apr 2011 APB)	BY 2010 $M Current Estimate (Dec 2019 SAR)	% Change
Program Acquisition Unit Cost			
Cost	32011.0	19277.5	
Quantity	55	35	
Unit Cost	582.018	550.786	-5.37
Average Procurement Unit Cost			
Cost	28369.2	15982.8	
Quantity	53	33	
Unit Cost	535.268	484.327	-9.52

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2010 $M Original UCR Baseline (Apr 2011 APB)	BY 2010 $M Current Estimate (Dec 2019 SAR)	% Change
Program Acquisition Unit Cost			
Cost	32011.0	19277.5	
Quantity	55	35	
Unit Cost	582.018	550.786	-5.37
Average Procurement Unit Cost			
Cost	28369.2	15982.8	
Quantity	53	33	
Unit Cost	535.268	484.327	-9.52



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 2018	557.729	491.658	648.814	587.506
Current Estimate	Dec 2019	550.786	484.327	640.317	578.512

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	77.329	-42.351	33.397	48.014	-156.777	0.000	0.000	-40.388	640.317

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	80.988	-71.870	39.252	52.209	-158.303	0.000	0.000	-57.724	578.512

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	22411.1
Total Quantity	2	55	N/A	35
PAUC	605.850	680.705	N/A	640.317

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	+25.8	+2659.0	+7.5	+2692.3
Quantity	--	-15096.4	--	-15096.4
Schedule	-108.9	+1295.3	-17.5	+1168.9
Engineering	-42.4	+1722.9	--	+1680.5
Estimating	-302.5	-4913.6	+40.5	-5175.6
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-428.0	-14332.8	+30.5	-14730.3
Current Changes				
Economic	+0.2	+13.6	+0.4	+14.2
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-0.8	-310.4	-0.4	-311.6
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-0.6	-296.8	--	-297.4
Total Changes	-428.6	-14629.6	+30.5	-15027.7
Current Estimate	3053.1	19090.9	267.1	22411.1

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	--	-10492.6	--	-10492.6
Schedule	-75.8	+925.8	-12.5	+837.5
Engineering	-32.5	+1269.1	--	+1236.6
Estimating	-257.8	-3846.8	+32.6	-4072.0
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-366.1	-12144.5	+20.1	-12490.5
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-0.8	-241.9	-0.3	-243.0
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-0.8	-241.9	-0.3	-243.0
Total Changes	-366.9	-12386.4	+19.8	-12733.5
Current Estimate	3066.4	15982.8	228.3	19277.5

Previous Estimate: December 2018

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+0.2
Revised estimate due to program execution realignments. (Estimating)	-0.6	-0.6
Adjustment for current and prior escalation. (Estimating)	-0.2	-0.2
RDT&E Subtotal	-0.8	-0.6

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+13.6
Revised estimate due to reallocation of budget from procurement to operations and sustainment for proper accounting. (OPN) (FY 2021-FY 2025) (Estimating)	-210.8	-269.8
Revised estimate due to Congressional reductions and addition in FY 2020. (OPN) (Estimating)	-4.2	-5.1
Revised estimate due to realignment of FY 2019 funds for Navy higher priority requirement. (OPN) (Estimating)	-7.9	-9.4
Revised estimate due to Congressional reduction in FY 2020 post delivery budget. (SCN) (Estimating)	-1.9	-2.6
Revised estimate due to realignment for higher Navy post-delivery requirement (Estimating)	-16.1	-21.1
Revised estimate for proper phasing of outfitting and post-delivery requirements (FY 2021-FY 2025) (SCN) (Estimating)	+10.6	+11.4
Revised estimate for prior year actuals and proper phasing of cost to complete requirements. (Estimating)	-1.8	-1.4
Adjustment for current and prior escalation. (Estimating)	-9.8	-12.4
Procurement Subtotal	-241.9	-296.8

MILCON	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+0.4
Adjustment for current and prior escalation. (Estimating)	-0.3	-0.4
MILCON Subtotal	-0.3	0.0

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	2	2	2	100.00%
Production	19	19	33	57.58%
Total Program Quantity Delivered	21	21	35	60.00%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	22411.1	Years Appropriated	18
Expended to Date	16246.3	Percent Years Appropriated	78.26%
Percent Expended	72.49%	Appropriated to Date	21618.4
Total Funding Years	23	Percent Appropriated	96.46%

The above data is current as of February 14, 2020.

Notes

First ship of each design is funded in RDT&E. LCS 1 - 20 and 22 delivered to the Navy. LCS 22 and LCS 19 delivered in February 2020. Expenditures for Seaframe program only.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	January 10, 2020
Source of Estimate:	POE
Quantity to Sustain:	35
Unit of Measure:	Ship
Service Life per Unit:	25.00 Years
Fiscal Years in Service:	FY 2009 - FY 2049

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

a) Crews:
66 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 35 LCS Program of record quantity

f) O&S costs for LCS Mission Modules not included in the O&S estimate shown in the LCS SAR.

Sustainment Strategy

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

LCS are minimally manned by rotational crews following a blue/gold crew construct. 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.

Sustainment execution includes maintenance execution planning, planned and emergent maintenance; planning for scheduled availabilities, facilities maintenance; on-site 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 Costal (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	**LCS Average Annual Cost Per Ship**	**No Antecedent (Antecedent)**
Unit-Level Manpower	10.879	--
Unit Operations	9.614	--
Maintenance	18.481	--
Sustaining Support	4.166	--
Continuing System Improvements	11.018	--
Indirect Support	5.272	--
Other	--	--
Total	59.430	--

Item	Total O&S Cost $M			
	LCS			No Antecedent (Antecedent)
	Current Development APB Objective/Threshold		Current Estimate	
Base Year	50479.0	55526.9	52001.3	N/A
Then Year	87089.3	N/A	76554.8	N/A

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 35 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 = $59.43M * 35 * 25 = $52,001.25M

O&S Cost Variance		
Category	**BY 2010 $M**	**Change Explanations**
Prior SAR Total O&S Estimates - Dec 2018 SAR	51193.9	
Programmatic/Planning Factors	41.5	Update to Master Planning / Ship Delivery schedule
Cost Estimating Methodology	0.0	
Cost Data Update	718.0	Updated Visibility And Management of Operating and Support Costs Data, ORATA (Miscellaneous Restricted Availability Technical Availability), ERATA (Emergent Restricted Availability/Technical Availability), 2SCOG (Cognizance Code) program, Habitability, FAT (Functional Acceptance Testing), Facilities, and Escalation
Labor Rate	47.9	Increases in Military and Civilian labor rates
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	807.4	
Current Estimate	52001.3	

Disposal Estimate Details

Date of Estimate: January 10, 2020

Source of Estimate: POE

Disposal/Demilitarization Total Cost (BY 2010 $M): 61.0

Revised disposal cost for total program quantity of 35 LCS based on revised historical inactivation and scrap costs.