# Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-472

# Amphibious Combat Vehicle Phase 1 Increment 1 (ACV 1.1)

As of FY 2019 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

## Table of Contents

## Sensitivity Originator

No originator info Available at this time.

## 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 |
| --- |
| Amphibious Combat Vehicle Phase 1 Increment 1 (ACV 1.1) |

| DoD Component |
| --- |
| Navy |

## Responsible Office

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**Date Assigned:** May 1, 2017

## References

| SAR Baseline (Development Estimate) |
| --- |
| Component Acquisition Executive (CAE) Approved Acquisition Program Baseline (APB) dated May 26, 2016 |

| Approved APB |
| --- |
| Component Acquisition Executive (CAE) Approved Acquisition Program Baseline (APB) dated May 26, 2016 |

## Mission and Description

The mission of the Amphibious Combat Vehicle Phase 1 Increment 1 (ACV 1.1) is to land and maneuver the surface assault elements of the landing force utilizing shore-to-shore water mobility during amphibious operations to seize inland objectives and to conduct armored vehicle operations in subsequent actions ashore. The ACV 1.1's expeditionary design will permit full integration into naval amphibious and Maritime Prepositioning Force shipping, and will support ship-to-shore connector requirements. The ACV 1.1 will provide protected mobility to embarked infantry and will possess sufficient lethality to deliver precision support-by-fire effects to dismounted infantry in the attack. The ACV 1.1's mobility will allow it to operate effectively with M1A1 Main Battle Tanks, as well as conduct mounted security operations in urban or restrictive terrain alongside other wheeled vehicles of the Marine Air-Ground Task Force. It will possess a communication and network capability that ensures mounted forces have Command and Control, as well as current situational and battle-space awareness. The ACV 1.1 will operate as part of maneuver task forces built around the Marine infantry battalion and will facilitate maneuver throughout a given operating area, to include the mobility to cross rivers and inland waterways.

# Executive Summary

## Program Highlights Since Last Report

Developmental Testing began in March 2017 as planned. Both BAE Systems Land & Armaments and Science Applications International Corporation participated in Amphibious Ship Operations aboard the USS Somerset in June 2017. Vehicles completed multiple successful launches and recoveries with the ship traveling at various speeds including at anchor. Additionally, both contractors conducted ship operations with the USS Anchorage in August 2017. Vehicles launched and recovered while the ship was underway, conducted like vehicle towing onto the ship, and lastly, both vendors conducted a 12 nautical mile swim followed by a 50 mile land movement. These successful events demonstrated ACV objective level performance in key requirements.

A successful Production Readiness Review was held in November 2017 to characterize LRIP manufacturing risks and the Operational Test Readiness Review was held in December 2017. Operational Assessment began in January 2018 and will conclude at the end of March 2018.

The Marine Requirements Oversight Council approved the CPD for ACV 1.1 in December 2017.

Both contractors delivered updated production proposals in January 2018 and the source selection process has begun for the LRIP option CLINs to be awarded after Milestone C in June 2018.

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

## History of Significant Developments Since Program Initiation

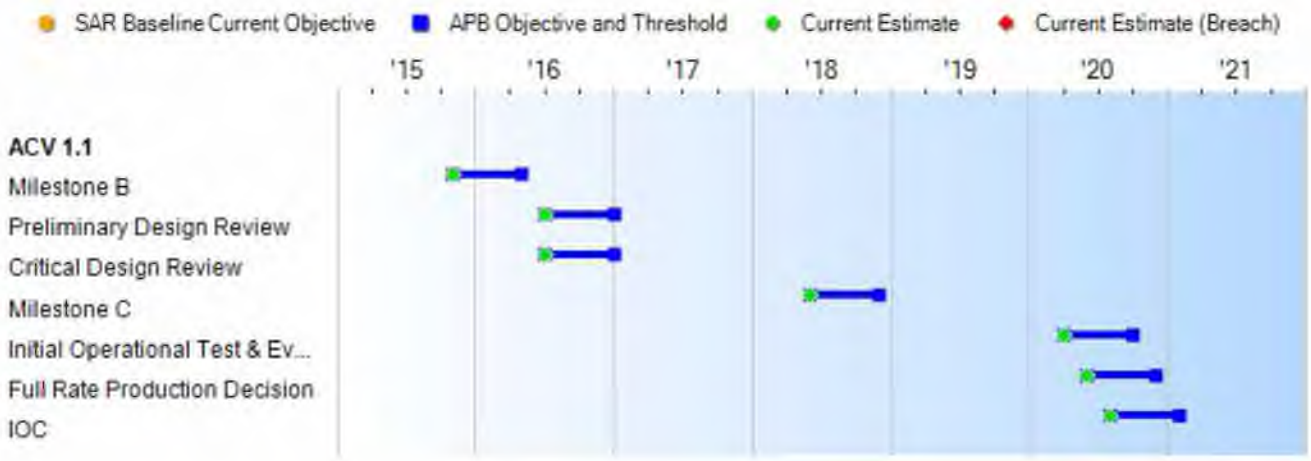
| History of Significant Developments Since Program Initiation | |
|---|---|
| **Date** | **Significant Development Description** |
| June 2014 | Materiel Development Decision milestone achieved with the ADM authorizing entry into the acquisition process at Milestone B. |
| March 2015 | Development Request For Proposal (RFP) Release Decision Point achieved with the ADM authorizing the release of the RFP for the EMD contract. |
| November 2015 | Milestone B was achieved with the ADM authorizing entry into the EMD phase. |
| November 2015 | Two competitive EMD contracts were awarded to BAE Systems Land & Armaments and Science Applications International Corporation. Each contract was comprised of Fixed Price Incentive Firm Target, Firm Fixed Priced, and Cost Plus Fixed Fee CLINs. |
| December 2015 | General Dynamics filed a protest with the Government Accountability Office (GAO) resulting in Stop Work Orders being issued to both BAE Systems Land & Armaments and Science Application International Corporation which delayed the approval of the Milestone B APB. |
| March 2016 | The GAO dismissed the protest and the Stop Work Orders were lifted allowing production to continue on the vehicle builds. |
| March 2017 | Developmental Testing began. |
| October 2017 | EMD vehicle deliveries from both competitors complete. |

## 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 |

## Schedule




| Schedule Events | | | | |
|---|---|---|---|---|
| **Events** | **SAR Baseline Development Estimate** | **Current APB Development Objective/Threshold** | | **Current Estimate** |
| Milestone B | Nov 2015 | Nov 2015 | May 2016 | Nov 2015 |
| Preliminary Design Review | Jul 2016 | Jul 2016 | Jan 2017 | Jul 2016 |
| Critical Design Review | Jul 2016 | Jul 2016 | Jan 2017 | Jul 2016 |
| Milestone C | Jun 2018 | Jun 2018 | Dec 2018 | Jun 2018 |
| Initial Operational Test & Evaluation | Apr 2020 | Apr 2020 | Oct 2020 | Apr 2020 |
| Full Rate Production Decision | Jun 2020 | Jun 2020 | Dec 2020 | Jun 2020 |
| IOC | Aug 2020 | Aug 2020 | Feb 2021 | Aug 2020 |

**Change Explanations**

None

## Performance

| Performance Characteristics | | | | |
|---|---|---|---|---|
| **SAR Baseline Development Estimate** | **Current APB Development Objective/Threshold** | | **Demonstrated Performance** | **Current Estimate** |
| **Net Ready (NR)** | | | | |
| The Amphibious Combat Vehicle (ACV) shall enable a Net-Centric military capability through the integration of Command, Control, Communications, Computers, and Intelligence (C4I) devices which are secure, interoperable and operationally effective. The ACV shall support the execution of joint information/system exchanges using C4I devices listed in the Platform Integration Information Table (PIIT). | The Amphibious Combat Vehicle (ACV) shall enable a Net-Centric military capability through the integration of Command, Control, Communications, Computers, and Intelligence (C4I) devices which are secure, interoperable and operationally effective. The ACV shall support the execution of joint information/system exchanges using C4I devices listed in the Platform Integration Information Table (PIIT). | (T=O) The Amphibious Combat Vehicle (ACV) shall enable a Net-Centric military capability through the integration of Command, Control, Communications, Computers, and Intelligence (C4I) devices which are secure, interoperable and operationally effective. The ACV shall support the execution of joint information/system exchanges using C4I devices listed in the Platform Integration Information Table (PIIT). | Testing Complete. Due to the competitive environment, test results will not be submitted to an open data source. | The Amphibious Combat Vehicle (ACV) shall enable a Net-Centric military capability through the integration of Command, Control, Communications, Computers, and Intelligence (C4I) devices which are secure, interoperable and operationally effective. The ACV shall support the execution of joint information/system exchanges using C4I devices listed in the Platform Integration Information Table (PIIT). |
| **Sustainment Materiel Availability** | | | | |
| The ACV shall have a Materiel Availability of 90% defined as "operational end items/total population". | The ACV shall have a Materiel Availability of 90% defined as "operational end items/total population". | The ACV shall have a Materiel Availability of 75% defined as "operational end items/total population". | Testing is ongoing. Due to the competitive environment, test results will not be submitted to open data sources. | The ACV shall have a Materiel Availability of 75% defined as "operational end items/total population". |
| **Sustainment Operational Availability** | | | | |
| ACV shall have an Operational Availability of 90%. | ACV shall have an Operational Availability of 90%. | ACV shall have an Operational Availability of 81%. | Testing is ongoing. Due to the competitive environment, test results will not be submitted to open data sources. | ACV shall have an Operational Availability of 81%. |

| | | | | |
|---|---|---|---|---|
| **Energy** | | | | |
| An ACV shall achieve at least 1.6 miles per gallon (mpg) across the land portion of the mission profile. ACV shall consume less than 0.80 gallons per hour (gph) while stationary and providing 5.6 kilowatt (kW) to power battle-command systems, weapon systems, and other key onboard systems. | An ACV shall achieve at least 1.6 miles per gallon (mpg) across the land portion of the mission profile. ACV shall consume less than 0.80 gallons per hour (gph) while stationary and providing 5.6 kilowatt (kW) to power battle-command systems, weapon systems, and other key onboard systems. | An ACV shall achieve at least 1.28 mpg across the land portion of the mission profile. ACV shall consume less than 1.9 gph while stationary and providing 5.6 kW to power battle-command systems, weapon systems, and other key onboard systems. | Testing is complete. Due to the competitive environment, test results will not be submitted to open data sources. | An ACV shall achieve at least 1.28 miles per gallon (mpg) across the land portion of the mission profile. ACV shall consume less than 1.9 gallons per hour (gph) while stationary and providing 5.6 kilowatt (kW) to power battle-command systems, weapon systems, and other key onboard systems. |
| **Sea Connectors** | | | | |
| The ACV at gross vehicle weight (GVW), without preparation, shall be transportable via Sea Connectors to the beach, through the surf zone. Two ACVs shall be transportable on the Ship to Shore Connector (SSC) at GVW. | The ACV at gross vehicle weight (GVW), without preparation, shall be transportable via Sea Connectors to the beach, through the surf zone. Two ACVs shall be transportable on the Ship to Shore Connector (SSC) at GVW. | (T=O) The ACV at gross vehicle weight (GVW), without preparation, shall be transportable via Sea Connectors to the beach, through the surf zone. Two ACVs shall be transportable on the Ship to Shore Connector (SSC) at GVW. | Testing is complete. Due to the competitive environment, test results will not be submitted to open data sources. | The ACV at gross vehicle weight (GVW), without preparation, shall be transportable via Sea Connectors to the beach, through the surf zone. Two ACVs shall be transportable on the Ship to Shore Connector (SSC) at GVW. |
| **System Survivability: Egress Kill Zone/Protected Fuel** | | | | |
| Given ballistic penetration damage to the fuel system external to the engine compartment, the ACV shall be capable of maneuvering for 25 miles on level primary roads without manual manipulation of any fuel system components or repair. | Given ballistic penetration damage to the fuel system external to the engine compartment, the ACV shall be capable of maneuvering for 25 miles on level primary roads without manual manipulation of any fuel system components or repair. | Given ballistic penetration damage to the fuel system external to the engine compartment, the ACV shall be capable of maneuvering for 5 miles on level primary roads without manual manipulation of any fuel system components or repair. | Testing complete. Due to the competitive environment, test results will not be submitted to open data sources. | Given ballistic penetration damage to the fuel system external to the engine compartment, the ACV shall be capable of maneuvering for 5 miles on level primary roads without manual manipulation of any fuel system components or repair. |
| **Water Mobility** | | | | |
| ACV up to Gross Vehicle Weight (GVW) shall be capable of ship -to-shore maneuver from distances of 12 Nautical Miles (NM) in water conditions up through 3 feet (ft.) Significant Wave | ACV up to Gross Vehicle Weight (GVW) shall be capable of ship -to-shore maneuver from distances of 12 Nautical Miles (NM) in water conditions up through 3 feet (ft.) Significant Wave | ACV up to GVW shall be capable of shore-to-shore maneuver from distances of 3 NM in water conditions up through 2 ft. SWH to land an infantry company ashore. | Testing complete. Due to the competitive environment, test results will not be submitted to open data | ACV up to Gross Vehicle Weight (GVW) shall be capable of ship -to-shore maneuver from distances of 12 Nautical Miles (NM) in water conditions up through 3 feet (ft.) Significant Wave |

| | | | | |
|---|---|---|---|---|
| Height (SWH) to land an infantry company ashore. | Height (SWH) to land an infantry company ashore. | | sources. | Height (SWH) to land an infantry company ashore. |
| **Payload** | | | | |
| ACV shall carry a crew and infantry with full combat loads (which includes 1st Day of Supply (DoS)), additional 2nd and 3rd DoS and Combat Essential Equipment (CEE). | ACV shall carry a crew and infantry with full combat loads (which includes 1st Day of Supply (DoS)), additional 2nd and 3rd DoS and Combat Essential Equipment (CEE). | ACV shall carry a crew and infantry with full combat loads (which includes 1st DoS), additional 2nd DoS and CEE. | Testing complete. Due to the competitive environment, test results will not be submitted to open data sources. | ACV shall carry a crew and infantry with full combat loads (which includes 1st Day of Supply (DoS)), additional 2nd DoS and Combat Essential Equipment (CEE). |
| **Training** | | | | |
| The ACV and ACV training systems shall be designed such that the time to train a single ACV operator or ACV maintainer is 20% less than the Assault Amphibious Vehicle (AAV) equivalent course. | The ACV and ACV training systems shall be designed such that the time to train a single ACV operator or ACV maintainer is 20% less than the Assault Amphibious Vehicle (AAV) equivalent course. | The ACV and ACV training systems shall be designed such that the time to train a single ACV operator or ACV maintainer is no longer than the AAV equivalent course. | Testing is ongoing. Due to the competitive environment, test results will not be submitted to open data sources. | The ACV and ACV training systems shall be designed such that the time to train a single ACV operator or ACV maintainer is no longer than the Assault Amphibious Vehicle (AAV) equivalent course. |

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

## Requirements Reference

CDD Version 5.0 (JROC Approved), dated March 16, 2015

## Change Explanations

None

## Notes

For the Payload KPP both contractors vehicles accommodate additional infantry, so the current estimate is somewhere between threshold and objective.

## Acronyms and Abbreviations

O - Objective
T - Threshold

## Track to Budget

**RDT&E**

| Appn | | BA | PE |
|---|---|---|---|
| Navy | 1319 | 04 | 0603611M |

| Project | Name | |
|---|---|---|
| 0025 | New Amphibious Vehicles | (Sunk) |

| Appn | | BA | PE |
|---|---|---|---|
| Navy | 1319 | 05 | 0605611M |

| Project | Name |
|---|---|
| 0025 | MC AVS Development & Demonstration |

**Notes**

In FY 2017, ACV 1.1 RDT&E was split into two BAs and two PEs, as follows:

BA 04, PE 0603611M for FY 2017 and prior years;

BA 05, PE 0605611M for FY 2018 and subsequent years.

The yearly totals shown above are the summation of both of these BAs/PEs.

Additionally, ACV 1.2 RDT&E funding was separated into a separate Project Unit and BA. ACV 1.2 Funding is not included in the totals shown above.

Amounts shown reflect PB-19 budget.

**Procurement**

| Appn | | BA | PE |
|---|---|---|---|
| Navy | 1109 | 02 | 0206211M |

| Line Item | Name |
|---|---|
| 2025 | AMPHIBIOUS COMBAT VEHICLE |
| 7000 | Spares and Repair Parts |

**Notes**

ACV 1.1 and ACV 1.2 have been separated into two programs in the budget; shown above are amounts for ACV 1.1 only.

Additionally, ACV 1.1 PMC was split into two separate BLIs (2025 and 7000) in order to properly identify initial spares for the program. Both are included in the PMC amounts above.

Amounts shown reflect PB-19 budget.

**MILCON**

| Appn | | BA | PE |
|---|---|---|---|
| Navy | 1205 | 01 | 0202176M |

| Project | Name | |
|---|---|---|
| 11901 | AAV-ACV Maintenance & Warehouse Facility | (Shared) |

Navy 1205 01 0216496M

| Project | Name |
|---|---|
| 11483 | ACV Maintenance Facility Upgrades |
| 11903 | ACV Covered Storage/Parking |
| 91236 | ACV Maintenance Facility Upgrades |

**Notes**

ACV 1.1 will operate out of existing Assault Amphibious Vehicle (AAV) operational sites. Currently, several efforts are underway to repair and improve AAV operational facilities--some of which are identified for AAV and some of which are identified for ACV. The projects are frequently combined in funding as single project efforts. The ACV 1.1 portion will not exceed the ICE of $24.9M (TY$).

MILCON is funded by Marine Corps Installations Command (MCICOM) and is not controlled by the Program Office.

Amounts shown reflect PB-19 funding by MCICOM.

**Acq O&M**

| Appn | BA | PE |
|---|---|---|
| Navy | 1106 | 01 0708012M |

| Subactivity Group | Name |
|---|---|
| 1A2A | Field Logistics |

**Notes**

Amounts shown reflect PB-19 budget.

## Cost and Funding

## Cost Summary

| Total Acquisition Cost | | | | | | | |
|---|---|---|---|---|---|---|---|
| Appropriation | BY 2014 $M | | | BY 2014 $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 | 764.3 | 764.3 | 840.7 | 649.3 | 810.5 | 810.5 | 683.7 |
| Procurement | 1015.5 | 1015.5 | 1117.1 | 1026.9 | 1168.4 | 1168.4 | 1161.9 |
| Flyaway | -- | -- | -- | 841.9 | -- | -- | 952.4 |
| Recurring | -- | -- | -- | 790.2 | -- | -- | 894.2 |
| Non Recurring | -- | -- | -- | 51.7 | -- | -- | 58.2 |
| Support | -- | -- | -- | 185.0 | -- | -- | 209.5 |
| Other Support | -- | -- | -- | 150.2 | -- | -- | 170.2 |
| Initial Spares | -- | -- | -- | 34.8 | -- | -- | 39.3 |
| MILCON | 21.2 | 21.2 | 23.3 | 20.1 | 24.9 | 24.9 | 23.4 |
| Acq O&M | 25.9 | 25.9 | 30.7 | 20.1 | 28.0 | 28.0 | 20.9 |
| Total | 1826.9 | 1826.9 | N/A | 1716.4 | 2031.8 | 2031.8 | 1889.9 |

**Current APB Cost Estimate Reference**

OSD CAPE Independent Cost Estimate for Milestone B. dated November 17, 2015

**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 ACV Budget includes efforts assigned to ACV 1.1, 1.2, and 2.0; however, the APB is reflective of ACV 1.1 only. Similarly, the OSD CAPE ICE is reflective of ACV 1.1 only.

| Total Quantity | | | |
|---|---|---|---|
| Quantity | SAR Baseline Development Estimate | Current APB Development | Current Estimate |
| RDT&E | 36 | 36 | 36 |
| Procurement | 204 | 204 | 204 |
| Total | 240 | 240 | 240 |

## Cost and Funding

## Funding Summary

| Appropriation Summary<br>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 | 442.1 | 179.0 | 42.4 | 19.7 | 0.5 | 0.0 | 0.0 | 0.0 | 683.7 |
| Procurement | 0.0 | 167.2 | 173.6 | 300.1 | 521.0 | 0.0 | 0.0 | 0.0 | 1161.9 |
| MILCON | 0.0 | 0.0 | 11.1 | 5.0 | 7.3 | 0.0 | 0.0 | 0.0 | 23.4 |
| Acq O&M | 15.3 | 1.4 | 1.4 | 1.4 | 1.4 | 0.0 | 0.0 | 0.0 | 20.9 |
| PB 2019 Total | 457.4 | 347.6 | 228.5 | 326.2 | 530.2 | 0.0 | 0.0 | 0.0 | 1889.9 |
| PB 2018 Total | 464.8 | 347.6 | 238.3 | 369.9 | 494.9 | 1.4 | 0.0 | 0.0 | 1916.9 |
| Delta | -7.4 | 0.0 | -9.8 | -43.7 | 35.3 | -1.4 | 0.0 | 0.0 | -27.0 |

| Quantity Summary<br>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 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| Production | 0 | 0 | 26 | 30 | 52 | 96 | 0 | 0 | 0 | 204 |
| PB 2019 Total | 36 | 0 | 26 | 30 | 52 | 96 | 0 | 0 | 0 | 240 |
| PB 2018 Total | 36 | 0 | 26 | 30 | 56 | 92 | 0 | 0 | 0 | 240 |
| Delta | 0 | 0 | 0 | 0 | -4 | 4 | 0 | 0 | 0 | 0 |

## Cost and Funding

## Annual Funding By Appropriation

| Annual Funding<br>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 |
| 2012 | -- | -- | -- | -- | -- | -- | 37.0 |
| 2013 | -- | -- | -- | -- | -- | -- | 48.0 |
| 2014 | -- | -- | -- | -- | -- | -- | 0.6 |
| 2015 | -- | -- | -- | -- | -- | -- | 28.1 |
| 2016 | -- | -- | -- | -- | -- | -- | 197.0 |
| 2017 | -- | -- | -- | -- | -- | -- | 131.4 |
| 2018 | -- | -- | -- | -- | -- | -- | 179.0 |
| 2019 | -- | -- | -- | -- | -- | -- | 42.4 |
| 2020 | -- | -- | -- | -- | -- | -- | 19.7 |
| 2021 | -- | -- | -- | -- | -- | -- | 0.5 |
| Subtotal | 36 | -- | -- | -- | -- | -- | 683.7 |

| Annual Funding<br>1319 \| RDT&E \| Research, Development, Test, and Evaluation, Navy | | | | | | | |
|---|---|---|---|---|---|---|---|
| Fiscal Year | Quantity | BY 2014 $M | | | | | |
| | | End Item Recurring Flyaway | Non End Item Recurring Flyaway | Non Recurring Flyaway | Total Flyaway | Total Support | Total Program |
| 2012 | -- | -- | -- | -- | -- | -- | 37.5 |
| 2013 | -- | -- | -- | -- | -- | -- | 48.1 |
| 2014 | -- | -- | -- | -- | -- | -- | 0.6 |
| 2015 | -- | -- | -- | -- | -- | -- | 27.4 |
| 2016 | -- | -- | -- | -- | -- | -- | 189.0 |
| 2017 | -- | -- | -- | -- | -- | -- | 124.0 |
| 2018 | -- | -- | -- | -- | -- | -- | 166.1 |
| 2019 | -- | -- | -- | -- | -- | -- | 38.6 |
| 2020 | -- | -- | -- | -- | -- | -- | 17.6 |
| 2021 | -- | -- | -- | -- | -- | -- | 0.4 |
| Subtotal | 36 | -- | -- | -- | -- | -- | 649.3 |

In FY 2017, ACV 1.1 RDT&E was split into two BAs and two PEs, as follows:

BA 04, PE 0603611M for FY 2017 and prior years;

BA 05, PE 0605611M for FY 2018 and subsequent years.

The yearly totals shown above are the summation of both of these BAs/PEs.

Additionally, ACV 1.2 RDT&E funding was separated into a separate Project Unit and BA. ACV 1.2 Funding is not included in the totals shown above.

| Annual Funding<br>1109 \| Procurement \| Procurement, Marine Corps | | | | | | | |
|---|---|---|---|---|---|---|---|
| Fiscal Year | Quantity | TY $M | | | | | |
| | | End Item Recurring Flyaway | Non End Item Recurring Flyaway | Non Recurring Flyaway | Total Flyaway | Total Support | Total Program |
| 2018 | 26 | 97.2 | 27.2 | 13.2 | 137.6 | 29.6 | 167.2 |
| 2019 | 30 | 111.2 | 24.1 | 6.0 | 141.3 | 32.3 | 173.6 |
| 2020 | 52 | 203.5 | 22.7 | 22.4 | 248.6 | 51.5 | 300.1 |
| 2021 | 96 | 380.6 | 27.7 | 16.6 | 424.9 | 96.1 | 521.0 |
| Subtotal | 204 | 792.5 | 101.7 | 58.2 | 952.4 | 209.5 | 1161.9 |

| Annual Funding<br>1109 \| Procurement \| Procurement, Marine Corps | | | | | | | |
|---|---|---|---|---|---|---|---|
| Fiscal Year | Quantity | BY 2014 $M | | | | | |
| | | End Item Recurring Flyaway | Non End Item Recurring Flyaway | Non Recurring Flyaway | Total Flyaway | Total Support | Total Program |
| 2018 | 26 | 89.3 | 25.0 | 12.1 | 126.4 | 27.2 | 153.6 |
| 2019 | 30 | 100.3 | 21.7 | 5.4 | 127.4 | 29.1 | 156.5 |
| 2020 | 52 | 179.9 | 20.1 | 19.8 | 219.8 | 45.5 | 265.3 |
| 2021 | 96 | 329.9 | 24.0 | 14.4 | 368.3 | 83.2 | 451.5 |
| Subtotal | 204 | 699.4 | 90.8 | 51.7 | 841.9 | 185.0 | 1026.9 |

ACV 1.1 and ACV 1.2 have been separated into two programs in the budget; shown above are amounts for ACV 1.1 only.

Additionally, ACV 1.1 PMC was split into two separate BLIs (2025 and 7000) in order to properly identify initial spares for the program. Both are included in the PMC amounts above.

| Cost Quantity Information<br>1109 \| Procurement \| Procurement, Marine Corps | | |
|---|---|---|
| **Fiscal Year** | **Quantity** | **End Item Recurring Flyaway (Aligned With Quantity) BY 2014 $M** |
| 2018 | 26 | 88.6 |
| 2019 | 30 | 99.4 |
| 2020 | 52 | 192.0 |
| 2021 | 96 | 313.3 |
| Subtotal | 204 | 693.3 |

| Annual Funding<br>1205 \| MILCON \| Military Construction, Navy and Marine Corps | |
|---|---|
| Fiscal Year | TY $M<br>Total Program |
| 2019 | 11.1 |
| 2020 | 5.0 |
| 2021 | 7.3 |
| Subtotal | 23.4 |

| Annual Funding<br>1205 \| MILCON \| Military Construction, Navy and Marine Corps | |
|---|---|
| Fiscal Year | BY 2014 $M |
| | Total Program |
| 2019 | 9.7 |
| 2020 | 4.3 |
| 2021 | 6.1 |
| Subtotal | 20.1 |

ACV 1.1 will operate out of existing Assault Amphibious Vehicle (AAV) operational sites. Currently, several efforts are underway to repair and improve AAV operational facilities--some of which are identified for AAV and some of which are identified for ACV. The projects are frequently combined in funding as single project efforts. The ACV 1.1 portion will not exceed the ICE of $24.9M (TY$).

MILCON is funded by Marine Corps Installations Command (MCICOM) and is not controlled by the Program Office.

| Annual Funding<br>1106 \| Acq O&M \| Operation and Maintenance, Marine Corps | |
|---|---|
| Fiscal Year | TY $M |
| | Total Program |
| 2012 | 2.5 |
| 2013 | 1.3 |
| 2014 | 2.9 |
| 2015 | 3.1 |
| 2016 | 3.7 |
| 2017 | 1.8 |
| 2018 | 1.4 |
| 2019 | 1.4 |
| 2020 | 1.4 |
| 2021 | 1.4 |
| Subtotal | 20.9 |

| Annual Funding<br>1106 \| Acq O&M \| Operation and Maintenance, Marine Corps | |
|---|---|
| Fiscal Year | BY 2014 $M |
| | Total Program |
| 2012 | 2.5 |
| 2013 | 1.3 |
| 2014 | 2.9 |
| 2015 | 3.0 |
| 2016 | 3.6 |
| 2017 | 1.7 |
| 2018 | 1.3 |
| 2019 | 1.3 |
| 2020 | 1.3 |
| 2021 | 1.2 |
| Subtotal | 20.1 |

## Low Rate Initial Production

| Item | Initial LRIP Decision | Current Total LRIP |
|---|---|---|
| **Approval Date** | 11/19/2015 | 11/19/2015 |
| **Approved Quantity** | 56 | 56 |
| **Reference** | Milestone B ADM | Milestone B ADM |
| **Start Year** | 2018 | 2018 |
| **End Year** | 2020 | 2020 |

The Current Total LRIP Quantity is more than 10% of the total production quantity to ensure an efficient ramp up to FRP with no break in production. Twenty one vehicles are required to support IOT&E and 35 vehicles will be used for initial fielding and to meet IOC requirements.

## Foreign Military Sales

None

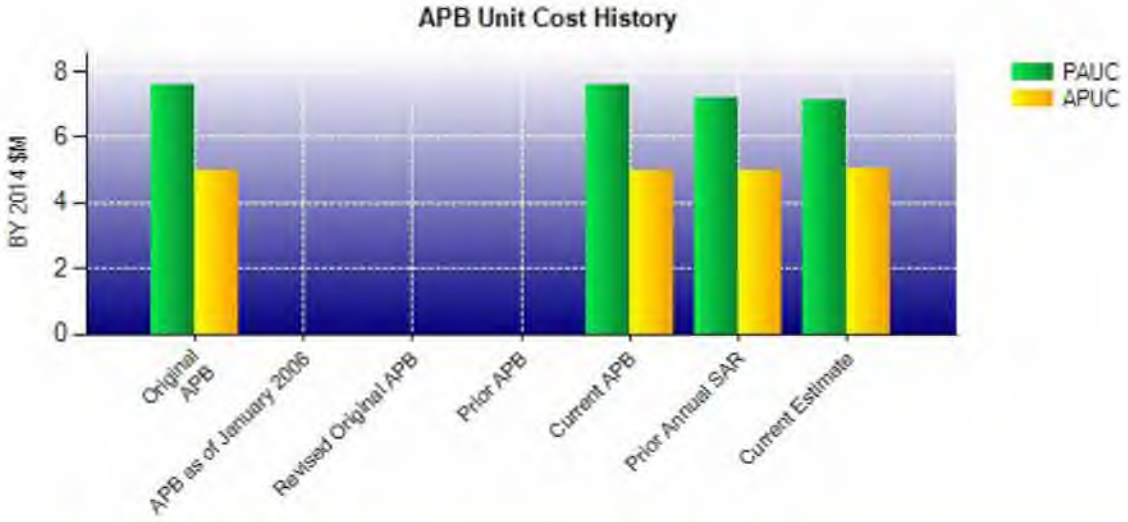
## Nuclear Costs

None

## Unit Cost

| Current UCR Baseline and Current Estimate (Base-Year Dollars) | | | |
|---|---|---|---|
| Item | BY 2014 $M<br>Current UCR Baseline (May 2016 APB) | BY 2014 $M<br>Current Estimate (Dec 2017 SAR) | % Change |
| Program Acquisition Unit Cost | | | |
| Cost | 1826.9 | 1716.4 | |
| Quantity | 240 | 240 | |
| Unit Cost | 7.612 | 7.152 | -6.04 |
| Average Procurement Unit Cost | | | |
| Cost | 1015.5 | 1026.9 | |
| Quantity | 204 | 204 | |
| Unit Cost | 4.978 | 5.034 | +1.12 |

| Original UCR Baseline and Current Estimate (Base-Year Dollars) | | | |
|---|---|---|---|
| Item | BY 2014 $M<br>Original UCR Baseline (May 2016 APB) | BY 2014 $M<br>Current Estimate (Dec 2017 SAR) | % Change |
| Program Acquisition Unit Cost | | | |
| Cost | 1826.9 | 1716.4 | |
| Quantity | 240 | 240 | |
| Unit Cost | 7.612 | 7.152 | -6.04 |
| Average Procurement Unit Cost | | | |
| Cost | 1015.5 | 1026.9 | |
| Quantity | 204 | 204 | |
| Unit Cost | 4.978 | 5.034 | +1.12 |




| APB Unit Cost History | | | | | |
|---|---|---|---|---|---|
| Item | Date | BY 2014 $M | | TY $M | |
| | | PAUC | APUC | PAUC | APUC |
| Original APB | May 2016 | 7.612 | 4.978 | 8.466 | 5.727 |
| APB as of January 2006 | N/A | N/A | N/A | N/A | N/A |
| Revised Original APB | N/A | N/A | N/A | N/A | N/A |
| Prior APB | N/A | N/A | N/A | N/A | N/A |
| Current APB | May 2016 | 7.612 | 4.978 | 8.466 | 5.727 |
| Prior Annual SAR | Dec 2016 | 7.212 | 4.985 | 7.987 | 5.685 |
| Current Estimate | Dec 2017 | 7.152 | 5.034 | 7.875 | 5.696 |

## 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 | |
| 8.466 | -0.095 | 0.000 | -0.009 | -0.098 | -0.558 | 0.000 | 0.169 | -0.591 | 7.875 |

| Current SAR Baseline to Current Estimate (TY $M) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Initial APUC Development Estimate | Changes | | | | | | | | APUC Current Estimate |
| | Econ | Qty | Sch | Eng | Est | Oth | Spt | Total | |
| 5.727 | -0.083 | 0.000 | -0.011 | 0.000 | -0.137 | 0.000 | 0.199 | -0.032 | 5.696 |

| SAR Baseline History | | | | |
|---|---|---|---|---|
| Item | SAR Planning Estimate | SAR Development Estimate | SAR Production Estimate | Current Estimate |
| Milestone A | N/A | N/A | N/A | N/A |
| Milestone B | N/A | Nov 2015 | N/A | Nov 2015 |
| Milestone C | N/A | Jun 2018 | N/A | Jun 2018 |
| IOC | N/A | Aug 2020 | N/A | Aug 2020 |
| Total Cost (TY $M) | N/A | 2031.8 | N/A | 1889.9 |
| Total Quantity | N/A | 240 | N/A | 240 |
| PAUC | N/A | 8.466 | N/A | 7.875 |

## Cost Variance

| Summary TY $M | | | | | |
|---|---|---|---|---|---|
| Item | RDT&E | Procurement | MILCON | Acq O&M | Total |
| SAR Baseline (Development Estimate) | 810.5 | 1168.4 | 24.9 | 28.0 | 2031.8 |
| Previous Changes | | | | | |
| Economic | -3.8 | -6.8 | -- | -- | -10.6 |
| Quantity | -- | -- | -- | -- | -- |
| Schedule | -- | -2.5 | -- | -- | -2.5 |
| Engineering | -- | -- | -- | -- | -- |
| Estimating | -92.0 | -33.6 | -3.4 | -7.1 | -136.1 |
| Other | -- | -- | -- | -- | -- |
| Support | -- | +34.3 | -- | -- | +34.3 |
| Subtotal | -95.8 | -8.6 | -3.4 | -7.1 | -114.9 |
| Current Changes | | | | | |
| Economic | -1.9 | -10.1 | -0.1 | -0.1 | -12.2 |
| Quantity | -- | -- | -- | -- | -- |
| Schedule | -- | +0.3 | -- | -- | +0.3 |
| Engineering | -23.6 | -- | -- | -- | -23.6 |
| Estimating | -5.5 | +5.6 | +2.0 | +0.1 | +2.2 |
| Other | -- | -- | -- | -- | -- |
| Support | -- | +6.3 | -- | -- | +6.3 |
| Subtotal | -31.0 | +2.1 | +1.9 | -- | -27.0 |
| Total Changes | -126.8 | -6.5 | -1.5 | -7.1 | -141.9 |
| CE - Cost Variance | 683.7 | 1161.9 | 23.4 | 20.9 | 1889.9 |
| CE - Cost & Funding | 683.7 | 1161.9 | 23.4 | 20.9 | 1889.9 |

| Summary BY 2014 $M | | | | | |
|---|---|---|---|---|---|
| Item | RDT&E | Procurement | MILCON | Acq O&M | Total |
| SAR Baseline (Development Estimate) | 764.3 | 1015.5 | 21.2 | 25.9 | 1826.9 |
| Previous Changes | | | | | |
| Economic | -- | -- | -- | -- | -- |
| Quantity | -- | -- | -- | -- | -- |
| Schedule | -- | -- | -- | -- | -- |
| Engineering | -- | -- | -- | -- | -- |
| Estimating | -88.6 | -27.6 | -2.8 | -5.9 | -124.9 |
| Other | -- | -- | -- | -- | -- |
| Support | -- | +29.0 | -- | -- | +29.0 |
| Subtotal | -88.6 | +1.4 | -2.8 | -5.9 | -95.9 |
| Current Changes | | | | | |
| Economic | -- | -- | -- | -- | -- |
| Quantity | -- | -- | -- | -- | -- |
| Schedule | -- | -- | -- | -- | -- |
| Engineering | -21.2 | -- | -- | -- | -21.2 |
| Estimating | -5.2 | +4.8 | +1.7 | +0.1 | +1.4 |
| Other | -- | -- | -- | -- | -- |
| Support | -- | +5.2 | -- | -- | +5.2 |
| Subtotal | -26.4 | +10.0 | +1.7 | +0.1 | -14.6 |
| Total Changes | -115.0 | +11.4 | -1.1 | -5.8 | -110.5 |
| CE - Cost Variance | 649.3 | 1026.9 | 20.1 | 20.1 | 1716.4 |
| CE - Cost & Funding | 649.3 | 1026.9 | 20.1 | 20.1 | 1716.4 |

Previous Estimate: December 2016

| RDT&E | $M | |
|---|---|---|
| Current Change Explanations | Base Year | Then Year |
| Revised escalation indices. (Economic) | N/A | -1.9 |
| Realigned requirements and funding to ACV 1.2 that does not support the baselined program. (Engineering) | -21.2 | -23.6 |
| Adjustment for current and prior escalation. (Estimating) | +1.3 | +1.4 |
| Revised estimate to reflect application of new outyear escalation indices. (Estimating) | +0.5 | +0.5 |
| Realignment for Small Business Innovative Research (SBIR). (Estimating) | -3.6 | -3.8 |
| Realignment for test activities funded at Amphibious Vehicle Test Branch (AVTB). (Estimating) | -1.3 | -1.4 |
| Realignment for Ground-Based Air Defense (GBAD). (Estimating) | -2.1 | -2.2 |
| RDT&E Subtotal | -26.4 | -31.0 |

| Procurement | $M | |
|---|---|---|
| Current Change Explanations | Base Year | Then Year |
| Revised escalation indices. (Economic) | N/A | -10.1 |
| Stretch-out of procurement buy profile due to the movement of 4 vehicles from FY 2020 to FY 2021 which aligns to the OSD CAPE ICE dated November 17, 2015 and updated on October 24, 2017 to account for changes in procurement schedule, inflation rates, and RDT&E execution. (Schedule) | 0.0 | +0.3 |
| Revised estimate due to miscellaneous adjustments for program surcharges. (Estimating) | -1.3 | -1.5 |
| Realignment of funding to ACV 1.2. (Estimating) | -1.1 | -1.2 |
| Adjustment for current and prior escalation. (Estimating) | +1.0 | +1.1 |
| Revised estimate to reflect application of new outyear escalation indices. (Estimating) | +6.2 | +7.2 |
| Adjustment for current and prior escalation. (Support) | +0.2 | +0.2 |
| Increase in Other Support to align with OSD CAPE ICE dated November 17, 2015 and updated on October 24, 2017 to account for changes in procurement schedule, inflation rates, and RDT&E execution. (Support) | +5.1 | +6.2 |
| Decrease in Initial Spares to align with OSD CAPE ICE dated November 17, 2015 and updated on October 24, 2017 to account for changes in procurement schedule, inflation rates, and RDT&E execution. (Support) | -0.1 | -0.1 |
| Procurement Subtotal | +10.0 | +2.1 |

| MILCON | $M | |
|---|---|---|
| Current Change Explanations | Base Year | Then Year |
| Revised escalation indices. (Economic) | N/A | -0.1 |
| Revised estimate due to refinements across FYDP at Marine Corps Installations Command. (Estimating) | +1.6 | +1.9 |
| Revised estimate to reflect application of new outyear escalation indices. (Estimating) | +0.1 | +0.1 |
| MILCON Subtotal | +1.7 | +1.9 |

| Acq O&M | $M |
|---|---|

| Current Change Explanations | Base Year | Then Year |
|---|---|---|
| Revised escalation indices. (Economic) | N/A | -0.1 |
| Revised estimate to reflect application of new outyear escalation indices. (Estimating) | +0.1 | +0.1 |
| Acq O&M Subtotal | +0.1 | 0.0 |

# Contracts

## Contract Identification

**Appropriation:** RDT&E
**Contract Name:** ACV 1.1
**Contractor:** Science Applications International Corporation
**Contractor Location:** 1710 SAIC Drive
McLean, VA 22102
**Contract Number:** M67854-16-C-0007
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF), Firm Fixed Price (FFP), Cost Plus Fixed Fee (CPFF)
**Award Date:** November 24, 2015
**Definitization Date:** November 24, 2015

| Contract Price | | | | | | | |
|---|---|---|---|---|---|---|---|
| Initial Contract Price ($M) | | | Current Contract Price ($M) | | | Estimated Price At Completion ($M) | |
| Target | Ceiling | Qty | Target | Ceiling | Qty | Contractor | Program Manager |
| 260.0 | 268.0 | 16 | 256.0 | 264.0 | 16 | 256.0 | 256.0 |

## Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to a $4M decrease on P00029 for CLIN 0003 Delivery Incentive because the requirement for the Delivery Incentive was not met by SAIC.

## Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FPIF/FFP/CPFF) contract.

## General Contract Variance Explanation

Cost and schedule variances are not reported for this contract because an EVM waiver was granted by USD (AT&L) on March 19, 2015 due to the cost of adding EVM versus the benefit achieved and the low level of residual risk.

## Notes

The Initial and Current Contract Price information includes all the CLINs for the entire EMD Phase. Some of the options will not be awarded, but they are included in the complete EMD information.

## Contract Identification

**Appropriation:** RDT&E
**Contract Name:** ACV 1.1
**Contractor:** BAE Systems Land and Armaments LP
**Contractor Location:** 34201 Van Dyke Avenue
Sterling Heights, MI 78312
**Contract Number:** M67854-16-C-0006
**Contract Type:** Fixed Price Incentive(Firm Target) (FPIF), Firm Fixed Price (FFP), Cost Plus Fixed Fee (CPFF)
**Award Date:** November 24, 2015
**Definitization Date:** November 24, 2015

| Contract Price | | | | | | | |
|---|---|---|---|---|---|---|---|
| Initial Contract Price ($M) | | | Current Contract Price ($M) | | | Estimated Price At Completion ($M) | |
| Target | Ceiling | Qty | Target | Ceiling | Qty | Contractor | Program Manager |
| 234.0 | 249.0 | 16 | 234.0 | 249.0 | 16 | 234.0 | 234.0 |

## Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FPIF/FFP/CPFF) contract.

## General Contract Variance Explanation

Cost and schedule variances are not reported for this contract because an EVM waiver was granted by USD (AT&L) on March 19, 2015 due to the cost of adding EVM versus the benefit achieved and the low level of residual risk.

## Notes

The Initial and Current Contract Price information includes all the CLINs for the entire EMD Phase. Some of the options will not be awarded, but they are included in the complete EMD information.

## Deliveries and Expenditures

| Deliveries | | | | |
|---|---|---|---|---|
| Delivered to Date | Planned to Date | Actual to Date | Total Quantity | Percent Delivered |
| Development | 32 | 32 | 36 | 88.89% |
| Production | 0 | 0 | 204 | 0.00% |
| Total Program Quantity Delivered | 32 | 32 | 240 | 13.33% |

| Expended and Appropriated (TY $M) | | | |
|---|---|---|---|
| Total Acquisition Cost | 1889.9 | Years Appropriated | 7 |
| Expended to Date | 503.5 | Percent Years Appropriated | 70.00% |
| Percent Expended | 26.64% | Appropriated to Date | 805.0 |
| Total Funding Years | 10 | Percent Appropriated | 42.59% |

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

Planned deliveries consist of 16 test vehicles ordered to date from each vendor, for a total of 32 vehicles.

Four additional production-representative test vehicles will be ordered from a single vendor upon the down-select decision and will undergo Full-Up System Level ballistics testing.

# Operating and Support Cost

## Cost Estimate Details

| | |
|---|---|
| **Date of Estimate:** | November 17, 2015 |
| **Source of Estimate:** | CAPE ICE |
| **Quantity to Sustain:** | 204 |
| **Unit of Measure:** | Vehicle |
| **Service Life per Unit:** | 20.00 Years |
| **Fiscal Years in Service:** | FY 2020 - FY 2045 |

Quantity to sustain is 204 vehicles because the 36 Development vehicles will not be fielded.

## Sustainment Strategy

During EMD, contractors will be required to perform all maintenance on their vehicles. Once down select is complete and the LRIP option exercised, PM Advanced Amphibious Assault will execute all actions required to establish organic support for the FRP decision. Once established, the ACV will be maintained utilizing uniformed Marines and the maintenance program structure outlined in Marine Corps Order 4790.23 Ground Equipment Maintenance Program (GEMP). The GEMP defines that structure utilizing a Field (which includes Organic and Intermediate level maintenance) and Depot capability.

Field Maintenance Capability: Field maintenance is performed by specially trained and equipped operators, crews, mechanics, and technicians within established organizations and activities. These include requisite advanced Military Occupational Specialty training for intermediate maintenance operations in either a direct or general support capacity. In most cases, field maintenance will be performed by uniformed Marine personnel within organizational maneuvering and intermediate supporting units. Field maintenance is aligned to funding, reporting, and sustainment strategies for best lifecycle management practices. It is preventative and corrective in nature and is divided into two distinct categories: organizational and intermediate.

> Organizational: Units will identify and perform field level tasks on their organic and/or assigned items, equipment, and materiel authorized per their respective Table of Organization and Equipment. A unit's field capabilities are constrained by mission, tactical situation, time available, personnel, skill set, logistical lift, stock positioning of inventory/spares, and authorized tooling. Organizational maintenance includes recovery, assessment, fault diagnosis and isolation, inventorying, cleaning, inspecting, preserving, lubricating, adjustment, testing, collecting data, and replacement of parts.
>
> Intermediate: Maintenance actions beyond organizational capabilities will be conducted by the Marine Logistics Group (MLG) or Logistics Combat Element in accordance with established command relationships in a Direct Support or General Support capability/capacity as defined within support structures MLG or supporting establishment's logistics support network. Intermediate maintenance includes intermediate fault diagnosis and isolation, modification, replacement, fabrication, component/sub-component/assembly/sub-assembly repair or rebuild, calibration and repair of Test, Measurement and Diagnostic Equipment, software maintenance, precision machining, welding, evacuation, disposal, salvage, and demilitarization of equipment or materiel. Intermediate maintenance capabilities include battle damage assessment, recovery and repair operations, overflow and on-site maintenance services, and technical assistance through maintenance contact or support teams.

Depot Maintenance Capability: Depot maintenance can be conducted by the Marine Corps' organic depots, other service depots, commercial industrial facilities, Original Equipment Manufacturers, or a combination thereof throughout the logistics chain framework. Depot capabilities include: major repairs; overhaul; and complete rebuild of equipment or materiel, components/sub-components/assemblies/sub-assemblies, software, and parts. Other capabilities include

manufacturing, conversion, reclamation, or fabrication of parts. Maintenance performed within depot capabilities is supported through program/product support management efforts.

The specific details of the ACV Maintenance strategy are pending the completion of several logistics-related supportability analyses that follow the competitive down-select decision, such as the Integrated Logistics Assessment (ILA) (2Q FY 2018), the Logistics Demonstration (4Q FY 2019), the Level of Repair Analysis (LORA) (1Q FY 2020), and the component-level Depot-level Source of Repair Analysis (DSOR) (3Q FY 2020) (dates are approximate).

## Antecedent Information

The Antecedent System is the Assault Amphibious Vehicle (AAV). It is important to note that the AAV program included multi-role variants such as a Personnel, Command & Control, and Recovery variant, whereas ACV 1.1 includes only a Personnel variant.

Unitized cost for AAV is based on estimated cost for 180 AAV Reliability, Availability, and Maintainability/Return to Standard (RAM/RS) vehicles configured as Personnel-variants based on a 20 year service life. AAV costs were estimated because a complete set of actual cost does not exist for AAV.

| Annual O&S Costs BY2014 $K | | |
|---|---|---|
| **Cost Element** | **ACV 1.1 Average Annual Cost Per Vehicle** | **Assault Amphibious Vehicle (AAV) (P-Variant Only) (Antecedent) Average Annual Cost Per Vehicle** |
| Unit-Level Manpower | 248.133 | 286.755 |
| Unit Operations | 14.063 | 22.507 |
| Maintenance | 152.556 | 232.413 |
| Sustaining Support | 200.433 | 240.018 |
| Continuing System Improvements | 72.359 | 54.440 |
| Indirect Support | 15.344 | 19.359 |
| Other | -- | -- |
| Total | 702.888 | 855.492 |

| Item | Total O&S Cost $M | | | |
|---|---|---|---|---|
| | ACV 1.1 | | | Assault Amphibious Vehicle (AAV) (P-Variant Only) (Antecedent) |
| | Current Development APB Objective/Threshold | | Current Estimate | |
| **Base Year** | 2867.8 | 3100.0 | 2867.8 | 3079.8 |
| **Then Year** | 4179.0 | N/A | 4179.0 | N/A |

## Equation to Translate Annual Cost to Total Cost

Average annual cost per vehicle = Total O&S cost / number of vehicles / service life per vehicle = $2,867.8M / 204 / 20 = $0.703M

| O&S Cost Variance | | |
|---|---|---|
| **Category** | **BY 2014 $M** | **Change Explanations** |

| | |
|---|---|
| Prior SAR Total O&S Estimates - Dec 2016 SAR | 2867.8 |
| Programmatic/Planning Factors | 0.0 |
| Cost Estimating Methodology | 0.0 |
| Cost Data Update | 0.0 |
| Labor Rate | 0.0 |
| Energy Rate | 0.0 |
| Technical Input | 0.0 |
| Other | 0.0 |
| Total Changes | 0.0 |
| Current Estimate | 2867.8 |

## Disposal Estimate Details

**Date of Estimate:** November 17, 2015

**Source of Estimate:** SCP

**Disposal/Demilitarization Total Cost (BY 2014 $M):** Total costs for disposal of all Vehicle are 12.8