Department of Defense
Fiscal Year (FY) 2019 Budget Estimates

February 2018

Navy

Justification Book Volume 1 of 1

Shipbuilding and Conversion, Navy

The estimated cost for this report for the Department of the Navy (DON) is $104,905.

The estimated total cost for supporting the DON budget justification material is approximately $1,643,653 for the 2018 fiscal year. This includes $79,753 in supplies and $1,563,900 in labor.

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Shipbuilding and Conversion, Navy

For expenses necessary for the construction, acquisition, or conversion of vessels as authorized by law, including armor and armament thereof, plant equipment, appliances, and machine tools and installation thereof in public and private plants; reserve plant and Government and contractor-owned equipment layaway; procurement of critical, long lead time components and designs for vessels to be constructed or converted in the future; and expansion of public and private plants, including land necessary therefore, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title.

In all: $21,871,437,000, to remain available for obligation until September 30, 2030: *Provided*, That additional obligations may be incurred after September 30, 2030, for engineering services, tests, evaluations, and other such budgeted work that must be performed in the final stage of ship construction: *Provided further*, That none of the funds provided under this heading for the construction or conversion of any naval vessel to be constructed in shipyards in the United States shall be expended in foreign facilities for the construction of major components of such vessel: *Provided further*, That none of the funds provided under this heading shall be used for the construction of any naval vessel in foreign shipyards.

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation	FY 2017 (Base + OCO)	FY 2018 PB Request with CR Adj Base	FY 2018 Total PB Requests* with CR Adj Base	FY 2018 PB Request with CR Adj OCO
Shipbuilding and Conversion, Navy	20,383,748	20,214,422	20,714,347	
Total Department of the Navy	20,383,748	20,214,422	20,714,347	

P-119PB: FY 2019 President's Budget (Published Version), as of January 29, 2018 at 08:42:58

Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation	FY 2018 Total PB Requests+ with CR Adj OCO	FY 2018 Emergency Requests** Emergency	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs	FY 2018 Remaining Req Emergency
Shipbuilding and Conversion, Navy				
Total Department of the Navy				

P-119PB: FY 2019 President's Budget (Published Version), as of January 29, 2018 at 08:42:58

Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency**	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency
Shipbuilding and Conversion, Navy	20,714,347		20,714,347
Total Department of the Navy	20,714,347		20,714,347

P-119PB: FY 2019 President's Budget (Published Version), as of January 29, 2018 at 08:42:58

Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Shipbuilding and Conversion, Navy	21,871,437		21,871,437
Total Department of the Navy	21,871,437		21,871,437

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation: Shipbuilding and Conversion, Navy

Budget Activity	FY 2017 (Base + OCO)	FY 2018 PB Request with CR Adj Base	FY 2018 Total PB Requests* with CR Adj Base	FY 2018 PB Request with CR Adj OCO
01. Fleet Ballistic Missile Ships		842,853	842,853	
02. Other Warships	15,151,254	15,797,999	16,297,924	
03. Amphibious Ships	3,462,034	1,710,927	1,710,927	
05. Auxiliaries, Craft, and Prior-Year Program Costs	1,770,460	1,551,903	1,551,903	
20. Undistributed		310,740	310,740	
Total Shipbuilding and Conversion, Navy	20,383,748	20,214,422	20,714,347	

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation: Shipbuilding and Conversion, Navy

Budget Activity	FY 2018 Total PB Requests+ with CR Adj OCO	FY 2018 Emergency Requests** Emergency	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs	FY 2018 Remaining Req Emergency
01. Fleet Ballistic Missile Ships				
02. Other Warships				
03. Amphibious Ships				
05. Auxiliaries, Craft, and Prior-Year Program Costs				
20. Undistributed				
Total Shipbuilding and Conversion, Navy				

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation: Shipbuilding and Conversion, Navy

Budget Activity	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency**	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency
01. Fleet Ballistic Missile Ships	842,853		842,853
02. Other Warships	16,297,924		16,297,924
03. Amphibious Ships	1,710,927		1,710,927
05. Auxiliaries, Craft, and Prior-Year Program Costs	1,551,903		1,551,903
20. Undistributed	310,740		310,740
Total Shipbuilding and Conversion, Navy	20,714,347		20,714,347

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation: Shipbuilding and Conversion, Navy

Budget Activity	FY 2019 Base	FY 2019 OCO	FY 2019 Total
01. Fleet Ballistic Missile Ships	3,005,330		3,005,330
02. Other Warships	15,780,025		15,780,025
03. Amphibious Ships	650,000		650,000
05. Auxiliaries, Craft, and Prior-Year Program Costs	2,436,082		2,436,082
20. Undistributed			
Total Shipbuilding and Conversion, Navy	21,871,437		21,871,437

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity	FY 2017 (Base + OCO) Cost	FY 2018 PB Request with CR Adj Base Quantity	FY 2018 PB Request with CR Adj Base Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity	FY 2018 Total PB Requests* with CR Adj Base Cost	FY 2018 PB Request with CR Adj OCO Quantity	FY 2018 PB Request with CR Adj OCO Cost	Sec
	Budget Activity 01: Fleet Ballistic Missile Ships										
	Fleet Ballistic Missile Ships										
1	OHIO Replacement Submarine										
	Advance Procurement (CY)					842,853		842,853			U
	C (FY 2018 for FY 2021) (M)					(783,316)		(783,316)			
	C (FY 2018 for FY 2024) (M)					(59,537)		(59,537)			
	C (FY 2019 for FY 2021) (M)										
	C (FY 2019 for FY 2024) (M)										
	Total Fleet Ballistic Missile Ships					842,853		842,853			
	Budget Activity 02: Other Warships										
	Other Warships										
2	Carrier Replacement Program	A			1	(10,652,999)	1	(10,652,999)			U
	Less: Advance Procurement (PY)					(-2,233,142)		(-2,233,142)			U
	Less: Subsequent Full Funding (FY)					(-6,539,143)		(-6,539,143)			U
						1,880,714		1,880,714			
	Subsequent Full Funding for FY 2013			1,255,783		2,561,058		2,561,058			
	Subsequent Full Funding for FY 2018										
3	Carrier Replacement Program										
	Advance Procurement (CY)			1,370,784							U
	C (FY 2017 for FY 2018) (M)			(1,370,784)							

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests+ with CR Adj OCO Quantity	FY 2018 Total PB Requests+ with CR Adj OCO Cost	FY 2018 Emergency Requests** Emergency Quantity	FY 2018 Emergency Requests** Emergency Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Cost	FY 2018 Remaining Req Emergency Quantity	FY 2018 Remaining Req Emergency Cost	Sec
	Budget Activity 01: Fleet Ballistic Missile Ships										
	Fleet Ballistic Missile Ships										
1	OHIO Replacement Submarine										
	Advance Procurement (CY)										U
	C (FY 2018 for FY 2021) (M)										
	C (FY 2018 for FY 2024) (M)										
	C (FY 2019 for FY 2021) (M)										
	C (FY 2019 for FY 2024) (M)										
	Total Fleet Ballistic Missile Ships										
	Budget Activity 02: Other Warships										
	Other Warships										
2	Carrier Replacement Program	A									U
	Less: Advance Procurement (PY)										U
	Less: Subsequent Full Funding (FY)										U
	Subsequent Full Funding for FY 2013										
	Subsequent Full Funding for FY 2018										
3	Carrier Replacement Program										
	Advance Procurement (CY)										U
	C (FY 2017 for FY 2018) (M)										

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Department of the Navy
FY 2019 President's Budget
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Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Cost	Sec
	Budget Activity 01: Fleet Ballistic Missile Ships								
	Fleet Ballistic Missile Ships								
1	OHIO Replacement Submarine								
	Advance Procurement (CY)			842,853				842,853	U
	C (FY 2018 for FY 2021) (M)			(783,316)				(783,316)	
	C (FY 2018 for FY 2024) (M)			(59,537)				(59,537)	
	C (FY 2019 for FY 2021) (M)								
	C (FY 2019 for FY 2024) (M)								
	Total Fleet Ballistic Missile Ships			842,853				842,853	
	Budget Activity 02: Other Warships								
	Other Warships								
2	Carrier Replacement Program	A	1	(10,652,999)			1	(10,652,999)	U
	Less: Advance Procurement (PY)			(-2,233,142)				(-2,233,142)	U
	Less: Subsequent Full Funding (FY)			(-6,539,143)				(-6,539,143)	U
				1,880,714				1,880,714	
	Subsequent Full Funding for FY 2013			2,561,058				2,561,058	
	Subsequent Full Funding for FY 2018								
3	Carrier Replacement Program								
	Advance Procurement (CY)								U
	C (FY 2017 for FY 2018) (M)								

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	FY 2019 Base Cost	FY 2019 OCO Quantity	FY 2019 OCO Cost	FY 2019 Total Quantity	FY 2019 Total Cost	Sec
	Budget Activity 01: Fleet Ballistic Missile Ships								
	Fleet Ballistic Missile Ships								
1	OHIO Replacement Submarine								
	Advance Procurement (CY)			3,005,330				3,005,330	U
	C (FY 2018 for FY 2021) (M)								
	C (FY 2018 for FY 2024) (M)								
	C (FY 2019 for FY 2021) (M)			(2,945,659)				(2,945,659)	
	C (FY 2019 for FY 2024) (M)			(59,671)				(59,671)	
	Total Fleet Ballistic Missile Ships			3,005,330				3,005,330	
	Budget Activity 02: Other Warships								
	Other Warships								
2	Carrier Replacement Program	A							U
	Less: Advance Procurement (PY)								U
	Less: Subsequent Full Funding (FY)								U
	Subsequent Full Funding for FY 2013								
	Subsequent Full Funding for FY 2018			1,598,181				1,598,181	
3	Carrier Replacement Program								
	Advance Procurement (CY)								U
	C (FY 2017 for FY 2018) (M)								

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity	FY 2017 (Base + OCO) Cost	FY 2018 PB Request with CR Adj Base Quantity	FY 2018 PB Request with CR Adj Base Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity	FY 2018 Total PB Requests* with CR Adj Base Cost	FY 2018 PB Request with CR Adj OCO Quantity	FY 2018 PB Request with CR Adj OCO Cost	Sec
4	Virginia Class Submarine	B	2	(5,408,901)	2	(5,532,718)	2	(5,532,718)			U
	Less: Advance Procurement (PY)			(-2,220,916)		(-2,227,403)		(-2,227,403)			U
				3,187,985		3,305,315		3,305,315			
5	Virginia Class Submarine Advance Procurement (CY)			1,852,234		1,920,596		1,920,596			U
	C (FY 2017 for FY 2018) (M)			(475,940)							
	C (FY 2017 for FY 2019) (M)			(1,376,294)							
	C (FY 2018 for FY 2019) (M)					(752,597)		(752,597)			
	C (FY 2018 for FY 2020) (M)					(1,167,999)		(1,167,999)			
	C (FY 2019 for FY 2020) (M)										
	C (FY 2019 for FY 2021) (M)										
	C (FY 2019 for FY 2022) (M)										
	C (FY 2019 for FY 2023) (M)										
6	CVN Refueling Overhauls	A									
	Subsequent Full Funding for FY 2016			1,699,120		1,604,890		1,604,890			
7	CVN Refueling Overhauls Advance Procurement (CY)			233,149		75,897		75,897			U
	C (FY 2017 for FY 2020) (M)			(233,149)							
	C (FY 2018 for FY 2021) (M)					(75,897)		(75,897)			
	C (FY 2019 for FY 2021) (M)										
8	DDG 1000	A		271,756		223,968		223,968			U

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests+ with CR Adj OCO Quantity	FY 2018 Total PB Requests+ with CR Adj OCO Cost	FY 2018 Emergency Requests** Emergency Quantity	FY 2018 Emergency Requests** Emergency Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Cost	FY 2018 Remaining Req Emergency Quantity	FY 2018 Remaining Req Emergency Cost	Sec
4	Virginia Class Submarine	B									U
	Less: Advance Procurement (PY)										U
				----------		----------		----------		----------	
5	Virginia Class Submarine Advance Procurement (CY)										U
	C (FY 2017 for FY 2018) (M)										
	C (FY 2017 for FY 2019) (M)										
	C (FY 2018 for FY 2019) (M)										
	C (FY 2018 for FY 2020) (M)										
	C (FY 2019 for FY 2020) (M)										
	C (FY 2019 for FY 2021) (M)										
	C (FY 2019 for FY 2022) (M)										
	C (FY 2019 for FY 2023) (M)										
6	CVN Refueling Overhauls	A									
	Subsequent Full Funding for FY 2016										
7	CVN Refueling Overhauls Advance Procurement (CY)										U
	C (FY 2017 for FY 2020) (M)										
	C (FY 2018 for FY 2021) (M)										
	C (FY 2019 for FY 2021) (M)										
8	DDG 1000	A									U

Department of the Navy
FY 2019 President's Budget
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Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Cost	Sec
4	Virginia Class Submarine	B	2	(5,532,718)			2	(5,532,718)	U
	Less: Advance Procurement (PY)			(-2,227,403)				(-2,227,403)	U
				3,305,315				3,305,315	
5	Virginia Class Submarine								
	Advance Procurement (CY)			1,920,596				1,920,596	U
	C (FY 2017 for FY 2018) (M)								
	C (FY 2017 for FY 2019) (M)								
	C (FY 2018 for FY 2019) (M)			(752,597)				(752,597)	
	C (FY 2018 for FY 2020) (M)			(1,167,999)				(1,167,999)	
	C (FY 2019 for FY 2020) (M)								
	C (FY 2019 for FY 2021) (M)								
	C (FY 2019 for FY 2022) (M)								
	C (FY 2019 for FY 2023) (M)								
6	CVN Refueling Overhauls	A							
	Subsequent Full Funding for FY 2016			1,604,890				1,604,890	
7	CVN Refueling Overhauls								
	Advance Procurement (CY)			75,897				75,897	U
	C (FY 2017 for FY 2020) (M)								
	C (FY 2018 for FY 2021) (M)			(75,897)				(75,897)	
	C (FY 2019 for FY 2021) (M)								
8	DDG 1000	A		223,968				223,968	U

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Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	FY 2019 Base Cost	FY 2019 OCO Quantity	FY 2019 OCO Cost	FY 2019 Total Quantity	FY 2019 Total Cost	Sec
4	Virginia Class Submarine	B	2	(6,502,273)			2	(6,502,273)	U
	Less: Advance Procurement (PY)			(-2,128,891)				(-2,128,891)	U
				4,373,382				4,373,382	
5	Virginia Class Submarine Advance Procurement (CY)			2,796,401				2,796,401	U
	C (FY 2017 for FY 2018) (M)								
	C (FY 2017 for FY 2019) (M)								
	C (FY 2018 for FY 2019) (M)								
	C (FY 2018 for FY 2020) (M)								
	C (FY 2019 for FY 2020) (M)			(835,268)				(835,268)	
	C (FY 2019 for FY 2021) (M)			(1,468,403)				(1,468,403)	
	C (FY 2019 for FY 2022) (M)			(246,365)				(246,365)	
	C (FY 2019 for FY 2023) (M)			(246,365)				(246,365)	
6	CVN Refueling Overhauls	A							
	Subsequent Full Funding for FY 2016								
7	CVN Refueling Overhauls Advance Procurement (CY)			449,597				449,597	U
	C (FY 2017 for FY 2020) (M)								
	C (FY 2018 for FY 2021) (M)								
	C (FY 2019 for FY 2021) (M)			(449,597)				(449,597)	
8	DDG 1000	A		270,965				270,965	U

Department of the Navy
FY 2019 President's Budget
Exhibit P-1 FY 2019 President's Budget
Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity	FY 2017 (Base + OCO) Cost	FY 2018 PB Request with CR Adj Base Quantity	FY 2018 PB Request with CR Adj Base Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity	FY 2018 Total PB Requests* with CR Adj Base Cost	FY 2018 PB Request with CR Adj OCO Quantity	FY 2018 PB Request with CR Adj OCO Cost	Sec
9	DDG-51	A	2	(3,364,381)	2	(3,499,079)	2	(3,499,079)			U
	Less: Advance Procurement (PY)			(-182,589)							U
				3,181,792		3,499,079		3,499,079			
	Subsequent Full Funding for FY 2016			433,000							
	Completion PY Shipbuild for FY 2011			15,959							
10	DDG-51										
	Advance Procurement (CY)					90,336		90,336			U
	C (FY 2018 for FY 2019) (M)					(39,362)		(39,362)			
	C (FY 2018 for FY 2020) (M)					(25,940)		(25,940)			
	C (FY 2018 for FY 2021) (M)					(12,517)		(12,517)			
	C (FY 2018 for FY 2022) (M)					(12,517)		(12,517)			
	C (FY 2019 for FY 2020) (M)										
	C (FY 2019 for FY 2021) (M)										
	C (FY 2019 for FY 2022) (M)										
11	Littoral Combat Ship	A	3	1,563,692	1	636,146	2	1,136,071			U
	Completion PY Shipbuild for FY 2012			3,600							
	Completion PY Shipbuild for FY 2013			82,400							
				15,151,254		15,797,999		16,297,924			
Total Other Warships											
Budget Activity 03: Amphibious Ships											
	Amphibious Ships										
12	LPD-17	A		1,786,000							U
	Subsequent Full Funding for FY 2015		1								
	Completion PY Shipbuild for FY 2012			45,060							
13	Expeditionary Sea Base (ESB)	A									U

Department of the Navy
FY 2019 President's Budget
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Total Obligational Authority
(Dollars in Thousands)

29 Jan 2018

Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests+ with CR Adj OCO Quantity	FY 2018 Total PB Requests+ with CR Adj OCO Cost	FY 2018 Emergency Requests** Emergency Quantity	FY 2018 Emergency Requests** Emergency Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Cost	FY 2018 Remaining Req Emergency Quantity	FY 2018 Remaining Req Emergency Cost	Sec
9	DDG-51	A									U
	Less: Advance Procurement (PY)										U
				----------		----------		----------		----------	
	Subsequent Full Funding for FY 2016										
	Completion PY Shipbuild for FY 2011										
10	DDG-51										
	Advance Procurement (CY)										U
	C (FY 2018 for FY 2019) (M)										
	C (FY 2018 for FY 2020) (M)										
	C (FY 2018 for FY 2021) (M)										
	C (FY 2018 for FY 2022) (M)										
	C (FY 2019 for FY 2020) (M)										
	C (FY 2019 for FY 2021) (M)										
	C (FY 2019 for FY 2022) (M)										
11	Littoral Combat Ship	A									U
	Completion PY Shipbuild for FY 2012										
	Completion PY Shipbuild for FY 2013										
				----------		----------		----------		----------	
Total Other Warships											
Budget Activity 03: Amphibious Ships											
Amphibious Ships											
12	LPD-17	A									U
	Subsequent Full Funding for FY 2015										
	Completion PY Shipbuild for FY 2012										
13	Expeditionary Sea Base (ESB)	A									U

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(Dollars in Thousands)

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Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Cost	Sec
9	DDG-51	A	2	(3,499,079)			2	(3,499,079)	U
	Less: Advance Procurement (PY)								U
				3,499,079				3,499,079	
	Subsequent Full Funding for FY 2016								
	Completion PY Shipbuild for FY 2011								
10	DDG-51								
	Advance Procurement (CY)			90,336				90,336	U
	C (FY 2018 for FY 2019) (M)			(39,362)				(39,362)	
	C (FY 2018 for FY 2020) (M)			(25,940)				(25,940)	
	C (FY 2018 for FY 2021) (M)			(12,517)				(12,517)	
	C (FY 2018 for FY 2022) (M)			(12,517)				(12,517)	
	C (FY 2019 for FY 2020) (M)								
	C (FY 2019 for FY 2021) (M)								
	C (FY 2019 for FY 2022) (M)								
11	Littoral Combat Ship	A	2	1,136,071			2	1,136,071	U
	Completion PY Shipbuild for FY 2012								
	Completion PY Shipbuild for FY 2013								
				16,297,924				16,297,924	
Total Other Warships									
Budget Activity 03: Amphibious Ships									
Amphibious Ships									
12	LPD-17	A							U
	Subsequent Full Funding for FY 2015								
	Completion PY Shipbuild for FY 2012								
13	Expeditionary Sea Base (ESB)	A							U

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(Dollars in Thousands)

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Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	FY 2019 Base Cost	FY 2019 OCO Quantity	FY 2019 OCO Cost	FY 2019 Total Quantity	FY 2019 Total Cost	Sec
9	DDG-51	A	3	(5,292,689)			3	(5,292,689)	U
	Less: Advance Procurement (PY)			(-39,362)				(-39,362)	U
				5,253,327				5,253,327	
	Subsequent Full Funding for FY 2016								
	Completion PY Shipbuild for FY 2011								
10	DDG-51								
	Advance Procurement (CY)			391,928				391,928	U
	C (FY 2018 for FY 2019) (M)								
	C (FY 2018 for FY 2020) (M)								
	C (FY 2018 for FY 2021) (M)								
	C (FY 2018 for FY 2022) (M)								
	C (FY 2019 for FY 2020) (M)			(87,720)				(87,720)	
	C (FY 2019 for FY 2021) (M)			(152,104)				(152,104)	
	C (FY 2019 for FY 2022) (M)			(152,104)				(152,104)	
11	Littoral Combat Ship	A	1	646,244			1	646,244	U
	Completion PY Shipbuild for FY 2012								
	Completion PY Shipbuild for FY 2013								
				15,780,025				15,780,025	
Total Other Warships									
Budget Activity 03: Amphibious Ships									
	Amphibious Ships								
12	LPD-17	A							U
	Subsequent Full Funding for FY 2015								
	Completion PY Shipbuild for FY 2012								
13	Expeditionary Sea Base (ESB)	A	1	650,000			1	650,000	U

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(Dollars in Thousands)

29 Jan 2018

Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity	FY 2017 (Base + OCO) Cost	FY 2018 PB Request with CR Adj Base Quantity	FY 2018 PB Request with CR Adj Base Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity	FY 2018 Total PB Requests* with CR Adj Base Cost	FY 2018 PB Request with CR Adj OCO Quantity	FY 2018 PB Request with CR Adj OCO Cost	Sec
14	LHA Replacement	A	1	(3,834,282)							U
	Less: Advance Procurement (PY)			(-505,636)							U
	Less: Subsequent Full Funding (FY)			(-1,710,927)							U
				1,617,719							
	Subsequent Full Funding for FY 2017					1,710,927		1,710,927			
15	Expeditionary Fast Transport (EPF)	A									
	Completion PY Shipbuild for FY 2012			6,710							
	Completion PY Shipbuild for FY 2013			6,545							
Total Amphibious Ships				3,462,034		1,710,927		1,710,927			
Budget Activity 05: Auxiliaries, Craft, and Prior-Year Program Costs											
Auxiliaries, Craft and Prior Yr Program Cost											
16	TAO Fleet Oiler	A			1	(539,067)	1	(539,067)			U
	Less: Advance Procurement (PY)					(-73,079)		(-73,079)			U
						465,988		465,988			
17	TAO Fleet Oiler										
	Advance Procurement (CY)			73,079		75,068		75,068			U
	C (FY 2017 for FY 2018) (M)			(73,079)							
	C (FY 2018 for FY 2019) (M)					(75,068)		(75,068)			
	C (FY 2019 for FY 2020) (M)										
18	Towing, Salvage, and Rescue Ship (ATS)	A			1	76,204	1	76,204			U
19	Moored Training Ship		1	(864,315)							U
	Less: Advance Procurement (PY)			(-239,788)							U
				624,527							

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Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests+ with CR Adj OCO Quantity	FY 2018 Total PB Requests+ with CR Adj OCO Cost	FY 2018 Emergency Requests** Emergency Quantity	FY 2018 Emergency Requests** Emergency Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Cost	FY 2018 Remaining Req Emergency Quantity	FY 2018 Remaining Req Emergency Cost	Sec
14	LHA Replacement	A									U
	Less: Advance Procurement (PY)										U
	Less: Subsequent Full Funding (FY)										U
				----------		----------		----------		----------	
	Subsequent Full Funding for FY 2017										
15	Expeditionary Fast Transport (EPF)	A									
	Completion PY Shipbuild for FY 2012										
	Completion PY Shipbuild for FY 2013										
				----------		----------		----------		----------	
Total Amphibious Ships											
Budget Activity 05: Auxiliaries, Craft, and Prior-Year Program Costs											
	Auxiliaries, Craft and Prior Yr Program Cost										
16	TAO Fleet Oiler	A									U
	Less: Advance Procurement (PY)										U
				----------		----------		----------		----------	
17	TAO Fleet Oiler										
	Advance Procurement (CY)										U
	C (FY 2017 for FY 2018) (M)										
	C (FY 2018 for FY 2019) (M)										
	C (FY 2019 for FY 2020) (M)										
18	Towing, Salvage, and Rescue Ship (ATS)	A									U
19	Moored Training Ship										U
	Less: Advance Procurement (PY)										U
				----------		----------		----------		----------	

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Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Cost	Sec
14	LHA Replacement	A							U
	Less: Advance Procurement (PY)								U
	Less: Subsequent Full Funding (FY)								U
				----------		----------		----------	
	Subsequent Full Funding for FY 2017			1,710,927				1,710,927	
15	Expeditionary Fast Transport (EPF)	A							
	Completion PY Shipbuild for FY 2012								
	Completion PY Shipbuild for FY 2013								
				----------		----------		----------	
Total Amphibious Ships				1,710,927				1,710,927	
Budget Activity 05: Auxiliaries, Craft, and Prior-Year Program Costs									
	Auxiliaries, Craft and Prior Yr Program Cost								
16	TAO Fleet Oiler	A	1	(539,067)			1	(539,067)	U
	Less: Advance Procurement (PY)			(-73,079)				(-73,079)	U
				----------		----------		----------	
				465,988				465,988	
17	TAO Fleet Oiler								
	Advance Procurement (CY)			75,068				75,068	U
	C (FY 2017 for FY 2018) (M)								
	C (FY 2018 for FY 2019) (M)			(75,068)				(75,068)	
	C (FY 2019 for FY 2020) (M)								
18	Towing, Salvage, and Rescue Ship (ATS)	A	1	76,204			1	76,204	U
19	Moored Training Ship								U
	Less: Advance Procurement (PY)								U
				----------		----------		----------	

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Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	FY 2019 Base Cost	FY 2019 OCO Quantity	FY 2019 OCO Cost	FY 2019 Total Quantity	FY 2019 Total Cost	Sec
14	LHA Replacement	A							U
	Less: Advance Procurement (PY)								U
	Less: Subsequent Full Funding (FY)								U
				----------		----------		----------	
	Subsequent Full Funding for FY 2017								
15	Expeditionary Fast Transport (EPF)	A							
	Completion PY Shipbuild for FY 2012								
	Completion PY Shipbuild for FY 2013								
				----------		----------		----------	
Total Amphibious Ships				650,000				650,000	
Budget Activity 05: Auxiliaries, Craft, and Prior-Year Program Costs									
	Auxiliaries, Craft and Prior Yr Program Cost								
16	TAO Fleet Oiler	A	2	(1,052,172)			2	(1,052,172)	U
	Less: Advance Procurement (PY)			(-75,068)				(-75,068)	U
				----------		----------		----------	
				977,104				977,104	
17	TAO Fleet Oiler								
	Advance Procurement (CY)			75,046				75,046	U
	C (FY 2017 for FY 2018) (M)								
	C (FY 2018 for FY 2019) (M)								
	C (FY 2019 for FY 2020) (M)			(75,046)				(75,046)	
18	Towing, Salvage, and Rescue Ship (ATS)	A	1	80,517			1	80,517	U
19	Moored Training Ship								U
	Less: Advance Procurement (PY)								U
				----------		----------		----------	

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Appropriation: 1611N Shipbuilding and Conversion, Navy

Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity	FY 2017 (Base + OCO) Cost	FY 2018 PB Request with CR Adj Base Quantity	FY 2018 PB Request with CR Adj Base Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity	FY 2018 Total PB Requests* with CR Adj Base Cost	FY 2018 PB Request with CR Adj OCO Quantity	FY 2018 PB Request with CR Adj OCO Cost	Sec
20	LCU 1700	A			1	31,850	1	31,850			U
21	Outfitting	A		626,158		548,703		548,703			U
22	Ship to Shore Connector	A	2	128,067	3	212,554	3	212,554			U
23	Service Craft	A		65,192		23,994		23,994			U
24	LCAC SLEP	A	3	82,074							U
25	Uscg Icebreakers	B									U
	Less: Advance Procurement (PY)										U
				----------		----------		----------		----------	
26	Uscg Icebreakers										
	Advance Procurement (CY)			150,000							U
	C (FY 2017 for FY 2019) (M)			(150,000)							
27	YP Craft Maintenance/ROH/SLEP	A		21,363							U
28	Completion of PY Shipbuilding Programs	A				117,542		117,542			U
	LHA R (MEMO NON ADD)					(14,200)		(14,200)			U
	CVN (MEMO NON ADD)					(20,000)		(20,000)			U
	LCS (MEMO NON ADD)					(26,865)		(26,865)			U
	DDG (MEMO NON ADD)					(51,377)		(51,377)			U
	LCAC (MEMO NON ADD)					(5,100)		(5,100)			U
				----------		----------		----------		----------	
Total Auxiliaries, Craft, and Prior-Year Program Costs				1,770,460		1,551,903		1,551,903			

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Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests+ with CR Adj OCO Quantity	FY 2018 Total PB Requests+ with CR Adj OCO Cost	FY 2018 Emergency Requests** Emergency Quantity	FY 2018 Emergency Requests** Emergency Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Cost	FY 2018 Remaining Req Emergency Quantity	FY 2018 Remaining Req Emergency Cost	Sec
20	LCU 1700	A									U
21	Outfitting	A									U
22	Ship to Shore Connector	A									U
23	Service Craft	A									U
24	LCAC SLEP	A									U
25	Uscg Icebreakers	B									U
	Less: Advance Procurement (PY)										U
26	Uscg Icebreakers Advance Procurement (CY) C (FY 2017 for FY 2019) (M)										U
27	YP Craft Maintenance/ROH/SLEP	A									U
28	Completion of PY Shipbuilding Programs	A									U
	LHA R (MEMO NON ADD)										U
	CVN (MEMO NON ADD)										U
	LCS (MEMO NON ADD)										U
	DDG (MEMO NON ADD)										U
	LCAC (MEMO NON ADD)										U
Total Auxiliaries, Craft, and Prior-Year Program Costs											

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Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Cost	Sec
20	LCU 1700	A	1	31,850			1	31,850	U
21	Outfitting	A		548,703				548,703	U
22	Ship to Shore Connector	A	3	212,554			3	212,554	U
23	Service Craft	A		23,994				23,994	U
24	LCAC SLEP	A							U
25	Uscg Icebreakers	B							U
	Less: Advance Procurement (PY)								U
				----------		----------		----------	
26	Uscg Icebreakers Advance Procurement (CY) C (FY 2017 for FY 2019) (M)								U
27	YP Craft Maintenance/ROH/SLEP	A							U
28	Completion of PY Shipbuilding Programs	A		117,542				117,542	U
	LHA R (MEMO NON ADD)			(14,200)				(14,200)	U
	CVN (MEMO NON ADD)			(20,000)				(20,000)	U
	LCS (MEMO NON ADD)			(26,865)				(26,865)	U
	DDG (MEMO NON ADD)			(51,377)				(51,377)	U
	LCAC (MEMO NON ADD)			(5,100)				(5,100)	U
				----------		----------		----------	
Total Auxiliaries, Craft, and Prior-Year Program Costs				1,551,903				1,551,903	

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Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	FY 2019 Base Cost	FY 2019 OCO Quantity	FY 2019 OCO Cost	FY 2019 Total Quantity	FY 2019 Total Cost	Sec
20	LCU 1700	A	2	41,520			2	41,520	U
21	Outfitting	A		634,038				634,038	U
22	Ship to Shore Connector	A	5	325,375			5	325,375	U
23	Service Craft	A		72,062				72,062	U
24	LCAC SLEP	A	1	23,321			1	23,321	U
25	Uscg Icebreakers	B		(150,000)				(150,000)	U
	Less: Advance Procurement (PY)			(-150,000)				(-150,000)	U
				----------		----------		----------	
26	Uscg Icebreakers Advance Procurement (CY) C (FY 2017 for FY 2019) (M)								U
27	YP Craft Maintenance/ROH/SLEP	A							U
28	Completion of PY Shipbuilding Programs	A		207,099				207,099	U
	LHA R (MEMO NON ADD)			(25,100)				(25,100)	U
	CVN (MEMO NON ADD)								U
	LCS (MEMO NON ADD)			(103,184)				(103,184)	U
	DDG (MEMO NON ADD)			(53,966)				(53,966)	U
	LCAC (MEMO NON ADD)			(9,400)				(9,400)	U
				----------		----------		----------	
Total Auxiliaries, Craft, and Prior-Year Program Costs				2,436,082				2,436,082	

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Line No	Item Nomenclature	Ident Code	FY 2017 (Base + OCO) Quantity	FY 2017 (Base + OCO) Cost	FY 2018 PB Request with CR Adj Base Quantity	FY 2018 PB Request with CR Adj Base Cost	FY 2018 Total PB Requests* with CR Adj Base Quantity	FY 2018 Total PB Requests* with CR Adj Base Cost	FY 2018 PB Request with CR Adj OCO Quantity	FY 2018 PB Request with CR Adj OCO Cost	Sec
	Budget Activity 20: Undistributed										
	Undistributed										
29	Adj to Match Continuing Resolution	A				310,740		310,740			U
	Total Undistributed					310,740		310,740			
	Total Shipbuilding and Conversion, Navy			20,383,748		20,214,422		20,714,347			

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Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests+ with CR Adj OCO Quantity	FY 2018 Total PB Requests+ with CR Adj OCO Cost	FY 2018 Emergency Requests** Emergency Quantity	FY 2018 Emergency Requests** Emergency Cost	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Quantity	FY 2018 Less Enacted Div B P.L.115-96*** MDDE + Ship Repairs Cost	FY 2018 Remaining Req Emergency Quantity	FY 2018 Remaining Req Emergency Cost	Sec
Budget Activity 20: Undistributed											
	Undistributed										
29	Adj to Match Continuing Resolution	A									U
Total Undistributed											
Total Shipbuilding and Conversion, Navy											

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Line No	Item Nomenclature	Ident Code	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Quantity	FY 2018 Total PB Requests* with CR Adj Base + OCO + Emergency** Cost	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Quantity	FY 2018 Less Enacted DIV B P.L.115-96*** MDDE + Ship Repairs Cost	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Quantity	FY 2018 Remaining Req with CR Adj Base + OCO + Emergency Cost	Sec
Budget Activity 20: Undistributed									
	Undistributed								
29	Adj to Match Continuing Resolution	A		310,740				310,740	U
Total Undistributed				310,740				310,740	
Total Shipbuilding and Conversion, Navy				20,714,347				20,714,347	

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Line No	Item Nomenclature	Ident Code	FY 2019 Base Quantity	FY 2019 Base Cost	FY 2019 OCO Quantity	FY 2019 OCO Cost	FY 2019 Total Quantity	FY 2019 Total Cost	Sec
	Budget Activity 20: Undistributed								
	Undistributed								
29	Adj to Match Continuing Resolution	A							U
	Total Undistributed								
	Total Shipbuilding and Conversion, Navy			21,871,437				21,871,437	

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Exhibit P-40, Advance Procurement Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 01: Fleet Ballistic Missile Ships / BSA 1: Fleet Ballistic Missile Ships	**P-1 Line Item Number / Title:** 1045 / COLUMBIA Class Submarine
Program Elements for Code B Items: N/A	**Other Related Program Elements:** 0603595N, 0603570N
Line Item MDAP/MAIS Code: N/A	

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Gross/Weapon System Cost *($ in Millions)*	-	773.138	842.853	3,005.330	-	3,005.330	1,453.159	1,041.808	1,246.105	1,825.230	28,511.990	38,699.613
Net Procurement (P-1) *($ in Millions)*	-	773.138	842.853	3,005.330	-	3,005.330	1,453.159	1,041.808	1,246.105	1,825.230	28,511.990	38,699.613
Total Obligation Authority *($ in Millions)*	**-**	**773.138**	**842.853**	**3,005.330**	**-**	**3,005.330**	**1,453.159**	**1,041.808**	**1,246.105**	**1,825.230**	**28,511.990**	**38,699.613**

Description:

Exhibit P-10, Advance Procurement Requirements Analysis (*page 1 - Budget Funding Justification*): PB 2019 Navy			Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 01 / 1		**P-1 Line Item Number / Title:** 1045 / COLUMBIA Class Submarine	
First System (2019) Award Date: October 2020	**First System (2019) Completion Date:** October 2027	**Interval Between Systems:** 0 Months	

Cost Elements	Production Leadtime (Months)	When Required* (Months)	FY 2017 ($ M)	FY 2018 ($ M)	FY 2019 ($ M)	FY 2020 ($ M)	FY 2021 ($ M)	FY 2022 ($ M)	FY 2023 ($ M)
PLANS (1)									
-	12-60	Various	773.138	727.798	685.600	613.424	-	-	-
Total: PLANS (1)			*773.138*	*727.798*	*685.600*	*613.424*	-	-	-
BASIC CONSTRUCTION (3) - MISSILE TUBE CONTINUOUS PRODUCTION									
SSBN 827	36	Various	-	59.537	59.671	66.169	-	-	-
SSBN 828	36	Various	-	-	0.000	19.477	86.288	90.522	-
SSBN 829	36	Various	-	-	0.000	-	-	57.399	112.663
Total: BASIC CONSTRUCTION (3) - MISSILE TUBE CONTINUOUS PRODUCTION			-	*59.537*	*59.671*	*85.646*	*86.288*	*147.921*	*112.663*
HM&E (6)									
SSBN 826 (In support of AC)	24-42	Various	-	-	26.000	41.948	-	-	-
SSBN 827 (In Support of AC)	24-42	Various	-	-	0.000	-	-	-	51.919
Total: HM&E (6)			-	-	*26.000*	*41.948*	-	-	*51.919*
ORDNANCE (7)									
SSBN 826	12-24	Various	-	-	48.300	79.400	-	-	-
SSBN 827	12-24	Various	-	-	0.000	-	-	20.623	44.708
Total: ORDNANCE (7)			-	-	*48.300*	*79.400*	-	*20.623*	*44.708*
NUCLEAR PROPULSION PLANT EQUIPMENT (5)									
SSBN 826	30-72	Various	-	-	1,700.896	-	-	-	-
SSBN 827 (In support of AC)	30-72	Various	-	-	0.000	-	952.737	661.262	-
SSBN 828 (In Support of AC)	30-72	Various	-	-	0.000	-	-	-	918.373
Total: NUCLEAR PROPULSION PLANT EQUIPMENT (5)			-	-	*1,700.896*	-	*952.737*	*661.262*	*918.373*
NFPC EXTERNAL POWER UPGRADE (8)									
-	12	Various	-	27.000	0.000	-	-	-	-
Total: NFPC EXTERNAL POWER UPGRADE (8)			-	*27.000*	-	-	-	-	-
BASIC CONSTRUCTION (4) - ADVANCE CONSTRUCTION									
SSBN 826	24-42	Various	-	28.518	72.100	148.380	-	-	-
SSBN 827	24-42	Various	-	-	0.000	-	2.783	78.261	236.450
SSBN 828	24-42	Various	-	-	0.000	-	-	-	2.966

Exhibit P-10, Advance Procurement Requirements Analysis (*page 1 - Budget Funding Justification*): PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 01 / 1	**P-1 Line Item Number / Title:** 1045 / COLUMBIA Class Submarine

First System (2019) Award Date:	First System (2019) Completion Date:	Interval Between Systems:
October 2020	October 2027	0 Months

Cost Elements	Production Leadtime (Months)	When Required* (Months)	FY 2017 ($ M)	FY 2018 ($ M)	FY 2019 ($ M)	FY 2020 ($ M)	FY 2021 ($ M)	FY 2022 ($ M)	FY 2023 ($ M)
Total: BASIC CONSTRUCTION (4) - ADVANCE CONSTRUCTION			-	*28.518*	*72.100*	*148.380*	*2.783*	*78.261*	*239.416*
BASIC CONSTRUCTION (2) - SHIPBUILDER PROCURED LLTM									
SSBN 826	24-42	Various	-	-	405.133	460.471	-	-	-
SSBN 827	24-42	Various	-	-	0.000	-	-	338.038	458.151
Total: BASIC CONSTRUCTION (2) - SHIPBUILDER PROCURED LLTM			-	-	*405.133*	*460.471*	-	*338.038*	*458.151*
ELECTRONICS (9)									
SSBN 826	12-24	Various	-	-	7.630	23.890	-	-	-
Total: ELECTRONICS (9)			-	-	*7.630*	*23.890*	-	-	-
Total Advance Procurement/Obligation Authority			**773.138**	**842.853**	**3,005.330**	**1,453.159**	**1,041.808**	**1,246.105**	**1,825.230**

*Note: "When Required" is the number of months required before ship delivery.

Exhibit P-10, Advance Procurement Requirements Analysis (*page 2 - Budget Funding Justification*): PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 01 / 1	**P-1 Line Item Number / Title:** 1045 / COLUMBIA Class Submarine

Cost Elements	FY 2019						
	Production Leadtime *(Months)*	When Required* *(Months)*	Unit Cost *($ M)*	Contract Forecast Date	2019 Qty *(Each)*	For FY	Total Cost Request *($ M)*
PLANS (1)							
-	12-60	Various	-	Oct 2018	-	2021	685.600
Total: PLANS (1)							*685.600*
BASIC CONSTRUCTION (3) - MISSILE TUBE CONTINUOUS PRODUCTION							
SSBN 827	36	Various	-	Oct 2018	-	2024	59.671
SSBN 828	36	Various	-		-	2026	0.000
SSBN 829	36	Various	-		-	2027	0.000
Total: BASIC CONSTRUCTION (3) - MISSILE TUBE CONTINUOUS PRODUCTION							*59.671*
HM&E (6)							
SSBN 826 (In support of AC)	24-42	Various	-	Oct 2018	-	2021	26.000
SSBN 827 (In Support of AC)	24-42	Various	-		-	2024	0.000
Total: HM&E (6)							*26.000*
ORDNANCE (7)							
SSBN 826	12-24	Various	-	Oct 2018	-	2021	48.300
SSBN 827	12-24	Various	-		-	2024	0.000
Total: ORDNANCE (7)							*48.300*
NUCLEAR PROPULSION PLANT EQUIPMENT (5)							
SSBN 826	30-72	Various	-	Oct 2018	-	2021	1,700.896
SSBN 827 (In support of AC)	30-72	Various	-		-	2024	0.000
SSBN 828 (In Support of AC)	30-72	Various	-		-	2026	0.000
Total: NUCLEAR PROPULSION PLANT EQUIPMENT (5)							*1,700.896*
NFPC EXTERNAL POWER UPGRADE (8)							
-	12	Various	-	Oct 2017	-	2021	0.000
Total: NFPC EXTERNAL POWER UPGRADE (8)							*-*
BASIC CONSTRUCTION (4) - ADVANCE CONSTRUCTION							
SSBN 826	24-42	Various	-	Oct 2018	-	2021	72.100
SSBN 827	24-42	Various	-		-	2024	0.000
SSBN 828	24-42	Various	-		-	2026	0.000
Total: BASIC CONSTRUCTION (4) - ADVANCE CONSTRUCTION							*72.100*

Exhibit P-10, Advance Procurement Requirements Analysis (*page 2 - Budget Funding Justification*): PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 01 / 1	**P-1 Line Item Number / Title:** 1045 / COLUMBIA Class Submarine

Cost Elements	FY 2019 Production Leadtime (Months)	When Required* (Months)	Unit Cost ($ M)	Contract Forecast Date	2019 Qty (Each)	For FY	Total Cost Request ($ M)
BASIC CONSTRUCTION (2) - SHIPBUILDER PROCURED LLTM							
SSBN 826	24-42	Various	-	Oct 2018	-	2021	405.133
SSBN 827	24-42	Various	-		-	2024	0.000
Total: BASIC CONSTRUCTION (2) - SHIPBUILDER PROCURED LLTM							*405.133*
ELECTRONICS (9)							
SSBN 826	12-24	Various	-	Oct 2018	-	2021	7.630
Total: ELECTRONICS (9)							*7.630*
Total Advance Procurement/Obligation Authority							**3,005.330**

Description:
JUSTIFICATION: The FY19 request represents an increase in requirements of $2,162M (from $843M to $3,005M) predominantly driven by procurement of the two-year long lead time of Government Furnished Equipment (Launcher and Fire Control subsystem components associated with the TRIDENT II D5 missile and Strategic Weapons System (SWS), Nuclear Propulsion Plant Equipment and Hull Mechanical and Electrical Systems) and Contractor Furnished Equipment. These funds are required in October of 2018 to ensure the COLUMBIA Program meets program schedules and the components will meet contractor in yard need dates to support on time construction start and delivery of the lead ship.

EXECUTION OF FUNDS: In accordance with 10 USC Code 2218a appropriated funds in this line item are transferred and executed out of the National Sea-Based Deterrence Fund.

MISSION: Strategic Deterrence. The COLUMBIA Class Program is an Acquisition Category (ACAT) ID Major Defense Acquisition Program (MDAP) to design, construct, and deliver a replacement for the OHIO Class Fleet Ballistic Missile Submarines (SSBNs), which begin retirement at a rate of one per year beginning in 2027. The mission of the COLUMBIA SSBN is to maintain an appropriate state of readiness to assist in deterring nuclear attack on the United States and its allies. In the event deterrence should fail, the force must be capable of launching missiles against pre-planned or adaptively planned targets. To fulfill this mission COLUMBIA SSBNs must be capable of performing extended strategic deterrent patrols without requiring assistance or replenishment. It does not have a requirement for additional capabilities or other missions unrelated to survivable strategic nuclear deterrence.

Armament:
Torpedo Tubes
Ballistic Missile Tubes

Major Electronics:
Trident D5 Strategic Weapons System
Command, Control, Communications and Intelligence System
- Open System Architecture
- Twenty-three Subsystems

On 14 December 2016, the Secretary of the Navy announced the lead ship of the OHIO Replacement Program will be USS COLUMBIA (SSBN 826) which officially designates this program the COLUMBIA Class Submarine Program.

Footnotes:

Exhibit P-10, Advance Procurement Requirements Analysis (*page 2 - Budget Funding Justification*): PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 01 / 1	**P-1 Line Item Number / Title:** 1045 / COLUMBIA Class Submarine

(1) COLUMBIA Class Lead Design Yard and program office support for the detail design for the Common Missile Compartment, Strategic Weapons System, Propulsion Plant, and Rest of Ship. Approximately 58 percent of design disclosures are scheduled to be completed in FY19 in order to support an 83 percent design completion at construction start. This design maturity target is necessary to achieve the aggressive 7 year lead ship construction
time, which is required to support Strategic Deterrent mission requirements. Detail design activities also support critical engineering analysis and risk reduction efforts.

(2) Advance Procurement is required to fund shipbuilder procured Long Lead Time Material (for example the Weapons Handling, Air Conditioning Unit, Diesel Generator Set, and Reverse Osmosis Unit). These and other components
are required early in the construction phase to meet the delivery schedule.

(3) Continuous Missile Tube Production: COLUMBIA Class is implementing Continuous Production of Missile Tubes to improve manufacturing efficiencies, improve vendor learning, maintain critical production skills, and reduce costs from leveraging high-volume procurements. These benefits will increase schedule margin and reduce risk to follow ship deliveries, while also achieving cost reduction savings. Missile Tubes produced for SSBN 826 are funded through RDT&E,N Program Element 0603595N, Project number 3220.

(4) Advance Construction (AC) efforts to de-risk SSBN826 construction schedule and improve probability of on-time delivery. AC begins construction activities in key areas to gain schedule margin and reduce controlling path risks. AC key areas include the Bow (Sections 1A and 1B in Supermodule 1 that includes the forward Ballast Tanks and Hemi-head), Stern (Sections 9B and 9C in Supermodule 6 that includes the X-Stern and aft Ballast Tanks and Hemi-Head) and Common Missile Compartment (CMC) adjacent areas contained in Supermodule 2 that include the Missile Compartment Control Module (MCCM). AC will include early structural fabrication on areas that have sufficient design maturity and material availability to begin construction and some outfitting. These areas include MCCM Deck Module Fabrication, Mid-Span Tank complex and Foundation Fabrication, and Missile Compartment Forward Bulkhead and S2C Hull Cylinder Fabrication. AC efforts improve efficiency by smoothing workload at Quonset Point and capture efficiencies. FY19 funding for AC supports the beginning of construction efforts associated with the key areas listed above.

(5) Nuclear Propulsion Plant Equipment AP is required to fund long-lead time propulsion plant equipment, and ensure production capability that supports projected production quantities. To support the COLUMBIA Class' implementation of advanced modular construction methods to drive cost efficiency, reactor plant components must be delivered earlier in the construction process. The component delivery timeline is in line with that of the VIRGINIA Class submarines.

(6) Hull Mechanical & Engineering AP is required to align the Propulsor procurement and production schedule with COLUMBIA Class Advance Construction schedule acceleration.

(7) Ordnance AP is required to fund the Long Lead Time Material (LLTM) associated with the Trident II D-5 missile and Strategic Weapons System (SWS) including Launcher and Fire Control subsystem components.

(8) Advance Procurement funding is required to support the Naval Foundry and Propeller Center External Power Upgrade. The Naval Foundry and Propeller Center requires upgrades to the private utility provider's infrastructure in order to provide an additional 15MW of electrical power to the facility. This requirement is driven by a required 85-ton furnace and six additional large machines required for concurrent COLUMBIA and VIRGINIA Class manufacturing. Upgrades must be complete by October 2018 to support critical path COLUMBIA Class propulsor prototype manufacturing demonstrations in early FY19.

(9) Electronics Equipment AP is required to fund the long-lead time material for the Command and Control System Module (CCSM). AP for the CCSM plays a critical role in early system installation and test in order to maintain the CCSM out of the critical path to ship delivery and minimize risk to ship construction. AP is required to procure selected electronics and associated pre-cable kits, cabling, connector plates and mechanical structures to be installed in this module in accordance with Shipyard Government Furnished Equipment (GFE) Delivery Dates. Pre-cable kits enable shipyard cable runs and platform interface verification prior to electronics installation. Mechanical structures establish footprint unique packaging for efficient electronics installation.

*Note: "When Required" is the number of months required before ship delivery.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: 223		

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	2	-	1	-	-	-	-	-	-	1	-	4
Gross/Weapon System Cost *($ in Millions)*	24,305.357	0.000	12,901.713	0.000	0.000	0.000	0.000	0.000	0.000	15,088.000	-	52,295.070
Less PY Advance Procurement *($ in Millions)*	7,020.165	-	2,233.142	-	-	-	-	-	-	2,562.407	-	11,815.714
Less Cost To Complete *($ in Millions)*	1,394.860	-	-	-	-	-	-	-	-	-	-	1,394.860
Less Subsequent Year Full Funding *($ in Millions)*	12,714.358	-	8,787.857	-	-	-	-	-	-	10,602.689	-	32,104.904
Net Procurement (P-1) *($ in Millions)*	3,175.974	0.000	1,880.714	0.000	0.000	0.000	0.000	0.000	0.000	1,922.904	-	6,979.592
Plus Subsequent Year Full Funding *($ in Millions)*	8,897.517	1,255.783	2,561.058	1,598.181	-	1,598.181	2,146.535	2,244.578	1,343.112	1,455.451	10,602.689	32,104.904
Full Funding TOA *($ in Millions)*	12,073.491	1,255.783	4,441.772	1,598.181	-	1,598.181	2,146.535	2,244.578	1,343.112	3,378.355	10,602.689	39,084.496
Plus CY Advance Procurement *($ in Millions)*	7,882.523	1,370.784	-	-	-	-	-	995.028	1,567.379	-	-	11,815.714
Plus Cost To Complete *($ in Millions)*	1,374.860	-	20.000	-	-	-	-	-	-	-	-	1,394.860
Total Obligation Authority *($ in Millions)*	**21,330.874**	**2,626.567**	**4,461.772**	**1,598.181**	**0.000**	**1,598.181**	**2,146.535**	**3,239.606**	**2,910.491**	**3,378.355**	**10,602.689**	**52,295.070**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	214.121	2.341	26.213	51.523	-	51.523	9.939	20.696	6.631	15.936	502.421	849.821
Total *($ in Millions)*	**21,544.995**	**2,628.908**	**4,487.985**	**1,649.704**	**-**	**1,649.704**	**2,156.474**	**3,260.302**	**2,917.122**	**3,394.291**	**11,105.110**	**53,144.891**
Gross/Weapon System Unit Cost *($ in Millions)*	12,152.679	-	12,901.713	-	-	-	-	-	-	15,088.000	-	13,073.768

Description:

Note: CVN 80 end cost to be reduced $300M with expected FY18 Congressional adjustment in enacted appropriations bill. End cost is $12,601.713M after reduction.

The CVN 80 DD&C contract award date has shifted from March 2018 in PB 18 to December 2018 for PB 19 as the Department continues to explore options for the most economical procurement of CVN 80. In advance of the DD&C contract, planned FY18 construction activities and material procurement will continue in accordance with the shipbuilders Integrated Master Schedule. The delivery date remains September 2027.

The FY 2019 funding request was reduced by $4.139 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

To provide credible, sustainable, independent forward presence during peacetime without access to land bases; operate as the cornerstone of a joint and/or allied maritime expeditionary force in response to crisis; and carry the war to the enemy through joint multi-mission offensive operations.

The Department is using a two-phase acquisition strategy for constructing and delivery of CVN 79. The Department is employing this two-phase strategy to drive further affordability into the CVN 79 procurement cost and life cycle cost. Completion of the CVN 79 Detail Design and Construction contract will represent preliminary acceptance of CVN 79 from the shipbuilder in June 2022. At that time, CVN 79 will be placed

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships	P-1 Line Item Number / Title: 2001 / Carrier Replacement Program	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: 223		

in commission and will have full propulsion, safe navigation, and limited aircraft launch and recovery capability. After this acceptance, the Department will conduct a follow-on Phase II availability which will complete installation of the remaining systems. This Phase II will conclude by September 2024 and upon final acceptance of the ship, delivery of CVN 79 is projected to occur in September 2024.

Characteristics:

	-
Length Overall	1092 ft
Beam	134 ft
Displacement	97,337 TONS
Draft	38.7 ft

Systems:

Electronics

-SHIP SELF DEFENSE SYSTEM (SSDS)

Ordnance

-ELECTROMAGNETIC AIRCRAFT LAUNCHING SYSTEM (EMALS)
-ENTERPRISE AIR SURVEILLANCE RADAR (EASR)
-ADVANCED ARRESTING GEAR (AAG)

Production Status:	CVN 79	CVN 80
Contract Award Date	Jun 2015	Dec 2018
Months to Completion		
a) Award to Delivery	111 months	105 months
b) Construction Start to Delivery	163 months	105 months
Delivery Date	Sep 2024	Sep 2027
Completion Of Fitting Out	Nov 2024	Nov 2027
Obligation Work Limit Date	Oct 2025	Oct 2028

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	Apr 2004	N/A		
Issue Date for TLS	Sep 2006	N/A		
Preliminary Design	Jan 2003	Jul 2008		
Contract Design	May 2004	Apr 2008		
Detail Design	Jan 2004	Sep 2009		
Request for Proposals	Jul 2007	Oct 2007		
Design Agent	Huntington Ingalls Industries			

Classification of Cost Estimate: CLASS C BUDGET ESTIMATE

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program

Cost Categories (†) indicates the presence of a P-8a	**FY 2013**		**FY 2018**	
	Qty *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*
Plan Costs	1	880.078	1	433.200
Basic Construction/Conversion		6,871.167		8,287.078
Change Orders		183.945		233.832
Electronics (†)		241.463		255.943
Propulsion Equipment		2,034.582		2,524.461
Hull, Mechanical, and Electrical (HM&E) (†)		26.145		28.866
Ordnance (†)		1,021.405		1,043.798
Other Cost		82.572		94.535
Total Ship Estimate		**11,341.357**		**12,901.713**
Less Advance Procurement FY 2007		52.750		-
Less Advance Procurement FY 2008		123.530		-
Less Advance Procurement FY 2009		1,210.561		-
Less Advance Procurement FY 2010		482.938		-
Less Advance Procurement FY 2011		902.473		-
Less Advance Procurement FY 2012		554.798		-
Less Advance Procurement FY 2016		-		862.358
Less Advance Procurement FY 2017		-		1,370.784
Less Subsequent Full Funding FY 2014		917.553		-
Less Subsequent Full Funding FY 2015		1,219.417		-
Less Subsequent Full Funding FY 2016		1,569.543		-
Less Subsequent Full Funding FY 2017		1,255.783		-
Less Subsequent Full Funding FY 2018		2,561.058		-
Less Subsequent Full Funding FY 2019		-		1,598.181
Less Subsequent Full Funding FY 2020		-		2,146.535
Less Subsequent Full Funding FY 2021		-		2,244.578
Less Subsequent Full Funding FY 2022		-		1,343.112
Less Subsequent Full Funding FY 2023		-		1,455.451
Net P-1 Funding		**490.953**		**1,880.714**

Exhibit P-27, Ship Production Schedule: PB 2019 Navy				Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1			P-1 Line Item Number / Title: 2001 / Carrier Replacement Program		
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
CVN 79	Huntington Ingalls Industries, Newport News Shipbuilding	2013	Jun 2015	Feb 2011	Sep 2024
CVN 80	Huntington Ingalls Industries, Newport News Shipbuilding	2018	Dec 2018	Dec 2018	Sep 2027
CVN 81	Huntington Ingalls Industries, Newport News Shipbuilding	2023	Mar 2023	Mar 2023	Sep 2032

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program

Electronics	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
P-35 Items				
CONSOLIDATED AFLOAT NETWORK AND ENTERPRISE SERVICES (CANES)	1	14.755	1	16.053
AN/USG-2, COOPERATIVE ENGAGEMENT CAPABILITY (CEC)	1	5.838	1	6.110
DIGITAL MODULAR RADIO (DMR) ULTRA HIGH FREQUENCY/VERY HIGH FREQUENCY LINE OF SIGHT (EHF/VHF LOS) SAT	1	10.023	1	10.904
AN/UPX-29(V), INTERROGATOR FRIEND OR FOE (IFF) W/MK XII	1	6.361	1	6.478
SPN-46, AUTOMATIC CARRIER LANDING SYSTEM	1	9.411	1	9.722
SHIP SELF DEFENSE SYSTEM (SSDS)	1	30.656	1	32.306
AN/TPX-42A(V)14, CARRIER AIR TRAFFIC CONTROL CENTER - DIRECT ALTITUDE AND IDENTIFY READOUT (CATCC-DAIR)	1	6.101	1	6.353
NAVY MULTI-BAND TERMINAL (NMT)	1	5.790	1	6.299
AN/SLQ-32(V)6, SURFACE ELECTRONIC WARFARE IMPROVEMENT PROGRAM (SEWIP) BLOCK 2	1	10.518	1	10.555
AN/SRQ-6/MCS-21, SHIPS SIGNAL EXPLOITATION EQUIPMENT (SSEE)	1	7.559	1	7.765
AN/SRC-61 (V)X HFDAG	1	5.959	1	6.059
P-35 Items Subtotal		**112.971**		**118.604**
Major Items				
AN/USQ-155(V)1 TACTICAL VARIANT SWITCH	1	2.521	1	2.743
INFORMATION ASSURANCE (IA)		1.875		2.031
AN/URC-141X(V), MULTI-FUNCTION INFORMATION DISTRIBUTION SYSTEM (MIDS)-ON SHIP (MOS)	1	1.540	1	1.586
AN/SLQ-25C DUAL, SURFACE SHIP TORPEDO DEFENSE SYSTEM, NIXIE	1	5.215	1	5.243
SHIPBOARD AIR TRAFFIC CONTROL COMMUNICATIONS (SATCC)	1	2.246	1	2.343
AN/WSN-7(V)3, RING LASER GYRO NAVIGATOR (RLGN)	1	2.869	1	3.121
DISTRIBUTED SYSTEMS DESIGN INTEGRATION SERVICES	1	17.631	1	19.181
C4I INTEGRATION & COORDINATION		9.301		10.119
DISTRIBUTED COMMON GROUND STATION - NAVY (DCGS-N)	1	2.174	1	2.319
AN/USQ-144K AUTOMATED DIGITAL NETWORK SYSTEM (ADNS)	1	1.209	1	1.315
AN/UYQ-86 COMMON DATA LINK MANAGEMENT SYSTEM (CDLMS) WITH NGC2P	1	1.759	1	1.816
OA-9277 ULTRA HIGH FREQUENCY (UHF) MULTICOUPLER	1	2.034	1	1.966
ARC-210 CARRIER AIR TRAFFIC CONTROL CENTER (CATCC) - PRIFLY - LANDING SIGNAL OFFICER (LSO) SYSTEM	1	1.533	1	1.668
WARFARE SYSTEM INTEGRATION		22.849		24.858
COMMERCIAL BROADBAND SATELLITE PROGRAM, FORCE LEVEL VARANT (CBSP-FLV)	2	2.266	2	2.465
AN/SSN-6(V)X BLOCK 4, NAVIGATION SENSOR SYSTEM INTERFACE (NAVSSI)	1	2.534	1	2.757

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program

Electronics	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
INTEGRATED STRIKE PLANNING & EXECUTION SYSTEMS (ISP&E)	1	8.221	1	8.246
AN/USQ-123(V), COMMUNICATIONS DATA LINK-SYSTEM (CDL-S)	1	2.388	1	2.480
AN/SPN-41 (V), INSTRUMENT LANDING SYSTEM (ILS)	1	3.870	1	3.897
SHIP SIGNAL EXPLOITATION SPACE (SSES/SI) COMMUNICATIONS	1	3.943	1	4.193
TURNKEY RADIO COMMUNICATIONS SYSTEM (RCS)	1	13.681	1	14.884
AN/USQ-T46X(V)X, BATTLE FORCE TACTICAL TRAINING SYSTEM (BFTT)	1	2.547	1	2.733
Major Items Subtotal		**114.206**		**121.964**
Other Cost Elements				
Other ELECTRONICS		14.286		15.375
Other Cost Elements Subtotal		**14.286**		**15.375**
Total Electronics		**241.463**		**255.943**

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program

Hull, Mechanical, and Electrical (HM&E)	FY 2013		FY 2018	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Items				
HM&E ENGINEERING SERVICES		20.736		22.894
LIFE RAFTS		1.721		1.900
SUPSHIP MATERIAL AND GFE		0.561		0.620
TRUCKS (FORKLIFTS)		0.747		0.825
Major Items Subtotal		**23.765**		**26.239**
Other Cost Elements				
Other HM&E		2.380		2.627
Other Cost Elements Subtotal		**2.380**		**2.627**
Total Hull, Mechanical, and Electrical (HM&E)		**26.145**		**28.866**

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program

Ordnance	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
P-35 Items				
ELECTROMAGNETIC AIRCRAFT LAUNCHING SYSTEM (EMALS)	1	601.911	1	607.873
ENTERPRISE AIR SURVEILLANCE RADAR (EASR)	1	74.500	1	79.000
ADVANCED ARRESTING GEAR (AAG)	1	232.542	1	251.261
PHALANX BLOCK 1B MK 15 MOD 21 & 22, CLOSE - IN WEAPONS SYSTEM (CIWS)	3	20.583	3	20.959
AN/SQQ-34, CARRIER-TACTICAL SUPPORT CENTER (CV-TSC)	1	4.354	1	4.456
MK29 MOD 5, GUIDED MISSILE LAUNCHING SYSTEM (GMLS)	2	11.597	2	11.995
AVIATION DATA MANAGEMENT AND CONTROL SYSTEM (ADMACS)	1	8.114	1	8.828
MK 49, MOD 3 ROLLING AIRFRAME MISSILE (RAM)	2	16.126	2	16.849
AN/SPQ-9B, ANTI-SHIP MISSILE DEFENSE (ASMD) SURFACE SURVEILLANCE AND TRACKING RADAR	1	13.220	1	13.726
MK-9 TARGET ILLUMINATOR	4	12.584	4	12.661
P-35 Items Subtotal		**995.531**		**1,027.608**
Major Items				
LANDING SIGNAL OFFICER DISPLAY SYSTEM (LSODS)	1	1.941	1	2.112
MORIAH BLOCK 2	1	1.378	1	1.499
LONG RANGE LINEUP SYSTEM (LRLS)	1	0.933	1	0.966
IMPROVED FRESNEL LENS OPTICAL LANDING SYSTEM (IFLOLS)	1	2.088	1	2.272
INTEGRATED LAUNCH AND RECOVERY TELEVISION SYSTEM (ILARTS)	1	5.096	1	5.544
Major Items Subtotal		**11.436**		**12.393**
Other Cost Elements				
DUAL BAND RADAR (DBR) (SPY-3 AND VOLUME SEARCH RADAR (VSR))		10.948		-
Other ORDNANCE		3.490		3.797
Other Cost Elements Subtotal		**14.438**		**3.797**
Total Ordnance		**1,021.405**		**1,043.798**

Remarks:
The Enterprise Air Surveillance Radar (EASR) is intended to replace Dual Band Radar (DBR) on CVN 79. The $10,948K cost on the CVN 79 represents a sunk cost paid for overruns associated with receiving the VSR from the DDG 1000 program and was originally planned for installation on CVN 79.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: CONSOLIDATED AFLOAT NETWORK AND ENTERPRISE SERVICES (CANES)	**PARM Code:** PMW 750

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	1	10.173	1	11.068
Spares		0.436		0.474
System Engineering		2.174		2.365
Technical Engineering Services		0.250		0.272
Other Costs		1.722		1.874
Total	**1**	**14.755**	**1**	**16.053**

Description:

CANES will provide the Navy tactical/non-tactical information environment and infrastructure necessary to enable hosting, extended services reach-back and reach-forward, and relay functions. These capabilities will support real time and non-real time tactical/non-tactical edge connected, connectionless, and ad-hoc voice, video and data information exchange requirements. CANES is the technology replacement for the following existing afloat networks: Combined Enterprise Regional Information Exchange System-Maritime (CENTRIXS-M), limited shipboard Internal Voice (IC), Integrated Shipboard Networking System (ISNS), Sensitive Compartmented Information (SCI) Networks, to include the Top Secret enclave, and Video Information eXchange System (VIXS). CANES will incrementally collapse Unclassified, Secret, Secret-Releasable, and SCI enclaves. CANES Increment 1 is the current POR for CVN 78. The CVN 79 estimate includes potential to collapse additional networks.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	TBD	TBD	Oct 2021		1	10.173
FY 2018	CVN 80	TBD	TBD	Oct 2024		1	11.068

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	23	12	Oct 2021
FY 2018	CVN 80	Sep 2027	23	12	Oct 2024

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: AN/USG-2, COOPERATIVE ENGAGEMENT CAPABILITY (CEC)	**PARM Code:** PEO IWS 6.0

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	1	2.750	1	2.750
Spares		0.432		0.470
System Engineering		2.017		2.195
Technical Engineering Services		0.181		0.197
Other Costs		0.458		0.498
Total	**1**	**5.838**	**1**	**6.110**

Description:

CEC significantly improves battle force air and missile defense capabilities by coordinating battle force air defense sensors into a single, near real-time, composite track picture capable of fire control quality. CEC is a sensor netting system which distributes sensor data from each CEC equipped ship, aircraft, and/or Cooperating Unit (CU), to all other CUs in the battle force through a real-time, line of sight, high data rate sensor and engagement data distribution network. CEC is highly resistant to jamming and provides accurate grid locking between CUs. Each CU independently employs high capacity parallel processing and advanced algorithms to combine all distributed sensor data into a high quality track picture that is the same for all CUs. CEC data is presented as a superset of the best sensor capabilities from each CU, all of which are integrated into a single input to each CU's combat weapons system.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	RAYTHEON	TBD	Aug 2021		1	2.750
FY 2018	CVN 80	TBD	TBD	Apr 2023		1	2.750

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	18	Aug 2021
FY 2018	CVN 80	Sep 2027	35	18	Apr 2023

Competition/Second Source Initiatives:

N/A

Remarks:

This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: DIGITAL MODULAR RADIO (DMR) ULTRA HIGH FREQUENCY/VERY HIGH FREQUENCY LINE OF SIGHT (EHF/VHF LOS) SAT	**PARM Code:** PMW 750

P-35 Category	FY 2013		FY 2018	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	1	8.444	1	9.187
Spares		0.050		0.055
System Engineering		0.591		0.643
Technical Engineering Services		0.520		0.565
Other Costs		0.350		0.380
Ancillary Equipment		0.068		0.074
Total	**1**	**10.023**	**1**	**10.904**

Description:

DMR-VHF/UHF LOS/SATCOM is an open architecture system that allows transmission and reception of UHF and VHF RF signals. The DMR replaces many legacy systems, including some crypto, Line Of Sight (LOS) and Satellite Communications (SATCOM) components.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2013	CVN 79	GENERAL DYNAMICS	C/FFP	Sep 2014		1	8.444
FY 2018	CVN 80	TBD	TBD	Apr 2023		1	9.187

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	35	18	Apr 2020
FY 2018	CVN 80	Sep 2027	35	18	Apr 2023

Competition/Second Source Initiatives:

None

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: AN/UPX-29(V), INTERROGATOR FRIEND OR FOE (IFF) W/MK XII	**PARM Code:** PMA 213

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	1	5.026	1	5.026
Ancillary Equipment		0.094		0.102
Spares		0.112		0.122
System Engineering		0.570		0.620
Technical Engineering Services		0.139		0.151
Other Costs		0.420		0.457
Total	**1**	**6.361**	**1**	**6.478**

Description:

IFF is an approved and fully supported centralized Mark XII Interrogator system. It uses one receiver transmitter that synchronizes video with up to four radar sweeps. It supplies synthetic video (symbology) to, and accepts requests from, as many as 22 remote locations. It provides digital target reporting to the combat systems/weapon systems computer via full scan, sectored, and/or pop-up interrogations. It provides instantaneous target reporting at requested range and azimuth through the use of an electronically-steered Antenna Group OE-120/UPX or OE-120A/UPX. It provides electronically evaluated Mode 4 target reporting directly to operators and over the combat systems/weapon system computer interface. It provides full redundancy so identification capabilities are retained in case of main processor, main antenna, or main receiver/transmitter failure.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	BAE SYSTEMS	C/FFP	May 2016		1	5.026
FY 2018	CVN 80	NOTHROP GRUMMAN-BAE SYSTEMS	SS/FFP	May 2021		1	5.026

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	24	Feb 2021
FY 2018	CVN 80	Sep 2027	52	24	May 2021

Competition/Second Source Initiatives:

None

Remarks:

This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: SPN-46, AUTOMATIC CARRIER LANDING SYSTEM	**PARM Code:** PMA 213

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	1	5.870	1	5.870
System Engineering		1.342		1.460
Technical Engineering Services		0.312		0.340
Other Costs		1.887		2.052
Total	**1**	**9.411**	**1**	**9.722**

Description:

AN/SPN-46 (V)3 provides Precision Approach Landing System (PALS) used for non-clear weather aircraft landings on board carriers.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	NAWCAD	Various	Feb 2021		1	5.870
FY 2018	CVN 80	NAWCAD	Various	Mar 2023		1	5.870

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	24	Feb 2021
FY 2018	CVN 80	Sep 2027	30	24	Mar 2023

Competition/Second Source Initiatives:

None.

Remarks:

This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: SHIP SELF DEFENSE SYSTEM (SSDS)	**PARM Code:** PEO IWS 10.0

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	1	11.900	1	11.900
Technical Data and Documentation		1.430		1.556
Spares		0.592		0.644
System Engineering		6.863		7.467
Technical Engineering Services		0.728		0.792
Other Costs		9.143		9.947
Total	**1**	**30.656**	**1**	**32.306**

Description:

The SSDS MK 2, Mod (x) Common C2 system provides capabilities for multi-mission requirements including Ship Protection against air, surface, and subsurface threats using both own-ship and remote data (Joint Composite Track Number (JCTN) and Joint Data Network (JDN)) in support of the Anti-Air Warfare (AAW) Capstone requirements.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	TBD	TBD	Feb 2021		1	11.900
FY 2018	CVN 80	TBD	TBD	Jun 2023		1	11.900

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	24	Feb 2021
FY 2018	CVN 80	Sep 2027	27	24	Jun 2023

Competition/Second Source Initiatives:

None

Remarks:

This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program

Equipment Item: AN/TPX-42A(V)14, CARRIER AIR TRAFFIC CONTROL CENTER - DIRECT ALTITUDE AND IDENTIFY READOUT (CATCC-DAIR)

PARM Code: PMA 213

P-35 Category	FY 2013		FY 2018	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	1	3.244	1	3.244
Spares		0.267		0.291
System Engineering		1.865		2.029
Technical Engineering Services		0.056		0.061
Other Costs		0.669		0.728
Total	**1**	**6.101**	**1**	**6.353**

Description:

CATCC-DAIR is an automatic beacon and radar that when integrated with an air traffic control radar, provides numeric and symbolic displays of position, identity, and altitude of aircraft in the terminal airspace on an operator's Plane Position Indicator (PPI) display.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2013	CVN 79	TBD	TBD	Feb 2021		1	3.244
FY 2018	CVN 80	TBD	TBD	Jun 2021		1	3.244

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	24	Feb 2021
FY 2018	CVN 80	Sep 2027	51	24	Jun 2021

Competition/Second Source Initiatives:

none

Remarks:

This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: NAVY MULTI-BAND TERMINAL (NMT)	**PARM Code:** PMW 750

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	1	5.223	1	5.682
Ancillary Equipment		0.048		0.052
System Engineering		0.090		0.098
Technical Engineering Services		0.090		0.098
Other Costs		0.339		0.369
Total	**1**	**5.790**	**1**	**6.299**

Description:

The Advanced Extremely High Frequency (AEHF) Navy Multi-band Terminal (NMT) will be used to receive signals from the Advanced EHF satellites which is a follow-on to the DoD's highly secure, highly protected MILSTAR communications satellite system.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	RAYTHEON	C/FFP	Jun 2014		1	5.223
FY 2018	CVN 80	TBD	TBD	Jun 2023		1	5.682

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	33	18	Jun 2020
FY 2018	CVN 80	Sep 2027	33	18	Jun 2023

Competition/Second Source Initiatives:

None

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: AN/SLQ-32(V)6, SURFACE ELECTRONIC WARFARE IMPROVEMENT PROGRAM (SEWIP) BLOCK 2	**PARM Code:** PEO IWS 2E

P-35 Category	FY 2013		FY 2018	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	1	10.100	1	10.100
Ancillary Equipment		0.315		0.343
System Engineering		0.091		0.099
Other Costs		0.012		0.013
Total	**1**	**10.518**	**1**	**10.555**

Description:

SEWIP Block 2 is a scalable Electronic Warfare enterprise suite to provide improved Electromagnetic Interference (EMI) mitigation and Combat System Interface capabilities to select new construction ships as well as upgrade current AN/SLQ-32(V)3 and (V)4 Electronic Warfare (EW) suites on existing ships. It provides enhanced shipboard Electronic Warfare (EW) for early detection, analysis, threat warning and protection from anti-ship missiles. SEWIP Block 2 focused on Electronic Support (ES) capability improvements.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2013	CVN 79	TBD	TBD	Aug 2021		1	10.100
FY 2018	CVN 80	TBD	TBD	Apr 2024		1	10.100

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	18	Aug 2021
FY 2018	CVN 80	Sep 2027	23	18	Apr 2024

Competition/Second Source Initiatives:

None

Remarks:

This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: AN/SRQ-6/MCS-21, SHIPS SIGNAL EXPLOITATION EQUIPMENT (SSEE)	**PARM Code:** PMW 750

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	1	5.214	1	5.214
Ancillary Equipment		0.078		0.085
Spares		0.192		0.209
System Engineering		0.827		0.900
Technical Engineering Services		0.176		0.191
Other Costs		1.072		1.166
Total	**1**	**7.559**	**1**	**7.765**

Description:

SSEE provided for cryptological signal acquisition, recognition, analysis and geo-location. It replaces Maritime Cryptological System (MCS-21) which replaces the Battle Group Passive Horizon Extension System (BGPHES).

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	TBD	TBD	Aug 2021		1	5.214
FY 2018	CVN 80	TBD	TBD	Jan 2024		1	5.214

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	18	Aug 2021
FY 2018	CVN 80	Sep 2027	26	18	Jan 2024

Competition/Second Source Initiatives:

None

Remarks:

This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: AN/SRC-61 (V)X HFDAG	**PARM Code:** PMW 170

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	1	4.816	1	4.816
Ancillary Equipment		0.048		0.052
Spares		0.010		0.011
System Engineering		0.199		0.216
Technical Engineering Services		0.484		0.527
Other Costs		0.402		0.437
Total	**1**	**5.959**	**1**	**6.059**

Description:

High Frequency (HF) Distributed Amplifier Group (DAG) is the Navy's Program of Record (POR) HF system and is the follow-on replacement of HF Radio Group (HFRG). HFDAG has a modular architecture and utilizes COTS equipment to the maximum extent possible. It provides Line Of Sight (LOS/Beyond Line of Sight (BLOS) voice and data transmission capabilities to USN Ships. The 16-channel CVN variant greatly improves capabilities from HFRG: (1) increases availability (Ao), (2) provides reprogrammable waveforms, (3) increases the number of waveforms available, (4) provides automatic link establishment (ALE).

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	TBD	TBD	Aug 2021		1	4.816
FY 2018	CVN 80	TBD	TBD	May 2023		1	4.816

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	18	Aug 2021
FY 2018	CVN 80	Sep 2027	34	18	May 2023

Competition/Second Source Initiatives:

N/A

Remarks:

This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: ELECTROMAGNETIC AIRCRAFT LAUNCHING SYSTEM (EMALS)	**PARM Code:** PMA 251

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	1	553.223	1	542.163
Technical Data and Documentation		0.492		-
Spares		-		28.050
System Engineering		19.083		17.507
Technical Engineering Services		3.017		2.556
Other Costs		26.096		17.597
Total	**1**	**601.911**	**1**	**607.873**

Description:

EMALS is an advanced technology electrically generated launching system that uses a moving electromagnetic field to propel aircraft to launch speed. EMALS is made up of six primary sub-systems: prime power interface, energy storage, energy distribution, power conversion, launch motor, and launch control subsystem. Benefits over the current C13 steam catapults include reduced weight and volume, greater launching flexibility for future aircraft, improved control, and reduced manning workload requirements.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	GENERAL ATOMICS	SS/FFP	May 2014	New	1	553.223
FY 2018	CVN 80	GENERAL ATOMICS	SS/FFP	Jan 2017	Option	1	542.163

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	81	48	Dec 2013
FY 2018	CVN 80	Sep 2027	61	48	Aug 2018

Competition/Second Source Initiatives:

None

Remarks:

The CVN 80 Spares P-35 category includes $28.05M for CVN 78 Class interim spares.

Long Lead Time Materials Undefinitized Contract Action (UCA) awarded May 2014, Undefinitized Production UCA awarded June 2015 for CVN 79, Production UCA definitized December 2016 for CVN 79 with option for CVN 80. CVN 80 option exercised January 2017 EMALS and AAG bundled savings on single production contract are reflective of contract negotiations.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: ENTERPRISE AIR SURVEILLANCE RADAR (EASR)	**PARM Code:** PEO IWS 2.0

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	1	56.000	1	58.000
System Engineering		18.500		21.000
Total	**1**	**74.500**	**1**	**79.000**

Description:

The Enterprise Air Surveillance Radar (EASR) suite will be a modern long-range, three-dimensional (3D) radar used to search, detect and provide space-stabilized, three-coordinate (range, bearing, height) data for air intercept control and designation to a weapon system and Air Traffic Control (ATC) system. The Enterprise Surveillance Suite (ESS), which includes EASR, is intended to replace the functions that Dual Band Radar (DBR) performed on CVN 78, but at a much lower cost.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	RAYTHEON	C/CPIF	Apr 2020		1	56.000
FY 2018	CVN 80	RAYTHEON	C/CPIF	Dec 2021		1	56.000

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	34	Apr 2020
FY 2018	CVN 80	Sep 2027	35	34	Dec 2021

Competition/Second Source Initiatives:

None

Remarks:

The hardware configuration for the CVN 79 and CVN 80 (non-rotating) is essentially three times that of a rotating configuration, which is currently planned for the big deck amphibious warfare ships. CVN 79 will have three phased arrays mounted around the island, while the amphibious warfare ships will use one rotating array. Below deck equipment is also provided at a larger scale with the non-rotating variant of EASR.

This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: ADVANCED ARRESTING GEAR (AAG)	**PARM Code:** PMA 251

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	1	206.612	1	199.219
Spares		-		32.497
System Engineering		8.062		4.471
Technical Engineering Services		6.910		4.771
Other Costs		10.958		10.303
Total	**1**	**232.542**	**1**	**251.261**

Description:

AAG provides an upgraded ability to recover all existing and projected aircraft carrier based air vehicles. The AAG system will replace the Mark 7 arresting gear system found on the NIMITZ class carriers and will be the aircraft recovery system for CVN 78, CVN 79, and CVN 80. AAG consists of six primary systems; energy absorption subsystem, energy storage subsystem, dynamic control subsystem, thermal management subsystem, cross deck pendant, and the control subsystem.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	GENERAL ATOMICS	SS/FFP	May 2014	New	1	206.612
FY 2018	CVN 80	GENERAL ATOMICS	SS/FFP	May 2017	Option	1	199.219

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	73	48	Aug 2014
FY 2018	CVN 80	Sep 2027	62	48	Jul 2018

Competition/Second Source Initiatives:

None

Remarks:

The CVN 80 Spares P-35 category includes $30.720M for CVN 78 Class Interim Spares and $1.770M for Initial Installation & Checkout Spares.

Long Lead Time Materials Undefinitized Contract Action (UCA) awarded May 2014, Undefinitized Production UCA awarded June 2015 for CVN 79, Production UCA definitized December 2016 for CVN 79 with option for CVN 80. EMALS and AAG bundled savings on single production contract are reflective of contract negotiations.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program

Equipment Item: PHALANX BLOCK 1B MK 15 MOD 21 & 22, CLOSE - IN WEAPONS SYSTEM (CIWS) **PARM Code:** IWS 3B

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	3	16.297	3	16.297
Ancillary Equipment		0.231		0.251
Spares		0.278		0.302
System Engineering		1.857		2.020
Technical Engineering Services		0.628		0.683
Other Costs		1.292		1.406
Total	**3**	**20.583**	**3**	**20.959**

Description:

Phalanx is a high fire rate Close-In Weapon System (CIWS) that automatically acquires, tracks and destroys Anti-Ship cruise missiles, Helos, Aircraft, and all types of Surface threats. The installed version will have one MK-15, Mod 21 and two MK-15 Mod 22 CIWS systems.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	RAYTHEON	C/FFP	Apr 2021		3	5.432
FY 2018	CVN 80	RAYTHEON	C/FFP	Oct 2023		3	5.432

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	22	Apr 2021
FY 2018	CVN 80	Sep 2027	25	22	Oct 2023

Competition/Second Source Initiatives:

None

Remarks:

This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: AN/SQQ-34, CARRIER-TACTICAL SUPPORT CENTER (CV-TSC)	**PARM Code:** PEO IWS 5E

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	1	3.199	1	3.199
Spares		0.100		0.109
System Engineering		0.350		0.381
Technical Engineering Services		0.250		0.272
Other Costs		0.455		0.495
Total	**1**	**4.354**	**1**	**4.456**

Description:

CV-TSC provides for carrier organic Anti-submarine Warfare (ASW), Mine Warfare (MIW), Surface Warfare (SUW), and other composite warfare area sensor data processing, tactical command and control, and organic/battle-group aircraft mission support. CV-TSC supports both ship self defense and embarked Destroyer Squadron (DESRON) missions. This system is Open Architecture Computing Environment (OACE), Joint Fires Network (JFN), and FORCEnet compliant, and includes redesign to maximize introduction of expected transformational technologies such as Common Processing System (CPS), Common Display System (CDS), sensor processing in support of the MH-60R helicopter, high speed bandwidth network, Excomm systems, net-centric warfare components, etc.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	TBD	TBD	Aug 2021		1	3.199
FY 2018	CVN 80	TBD	TBD	Aug 2023		1	3.199

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	18	Aug 2021
FY 2018	CVN 80	Sep 2027	31	18	Aug 2023

Competition/Second Source Initiatives:

None

Remarks:

This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: MK29 MOD 5, GUIDED MISSILE LAUNCHING SYSTEM (GMLS)	**PARM Code:** PEO IWS 3

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	2	7.071	2	7.071
Ancillary Equipment		0.400		0.435
Spares		0.922		1.003
System Engineering		0.750		0.816
Technical Engineering Services		0.710		0.773
Other Costs		1.744		1.897
Total	**2**	**11.597**	**2**	**11.995**

Description:

The MK 29 Mod 5 GMLS is a launcher only configuration integrated with the C2 system and will provide CVN 78, CVN 79, and CVN 80 with a cost effective means of employing the initial Evolved Sea Sparrow Missile (ESSM) capability. This configuration consist of an open architecture launching system and does not include operator workstations; all workstations and operator interactions necessary for system operation including but not limited to power application to the GMLS and control and safety/status monitoring of loaded cells is assumed to exist at the combat system level.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	TBD	TBD	Sep 2020		2	3.536
FY 2018	CVN 80	TBD	TBD	Jan 2023		2	3.536

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	29	Sep 2020
FY 2018	CVN 80	Sep 2027	27	29	Jan 2023

Competition/Second Source Initiatives:

None

Remarks:

This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program

Equipment Item: AVIATION DATA MANAGEMENT AND CONTROL SYSTEM (ADMACS) | **PARM Code:** PMA 251

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	1	4.725	1	5.141
System Engineering		0.873		0.950
Technical Engineering Services		0.544		0.592
Other Costs		1.972		2.145
Total	**1**	**8.114**	**1**	**8.828**

Description:

ADMACS is a virtual, seamless, data sharing, knowledge based data system that provides interface for all aviation data systems. It is a tactical real-time information management system maintaining data integrity throughout the ship spaces that manage aircraft launch and recovery operations on board the carrier. ADMACS includes data from launch and recovery equipment, air traffic control, aviation maintenance, landing signaling officer, etc.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	BOWHEAD	C/FFP	Jul 2016	Option	1	4.725
FY 2018	CVN 80	TBD	TBD	Feb 2024		1	5.141

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	31	12	Feb 2021
FY 2018	CVN 80	Sep 2027	31	12	Feb 2024

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: MK 49, MOD 3 ROLLING AIRFRAME MISSILE (RAM)	**PARM Code:** PEO IWS 3B

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	2	7.902	2	7.902
Ancillary Equipment		1.381		1.503
Technical Data and Documentation		0.035		0.038
Spares		0.140		0.152
System Engineering		2.190		2.383
Technical Engineering Services		0.380		0.413
Other Costs		4.098		4.458
Total	**2**	**16.126**	**2**	**16.849**

Description:

The MK 49 Mod 3 Rolling Airframe Missile (RAM) Weapon System is a lightweight, low cost, high power system for anti-ship missile defense against current and evolving threats. The Block 1 upgrade adds the capability of infrared, all-the-way missile guidance while maintaining the original dual-mode (RF/IR) capability. The helos, aircraft, and surface (HAS) upgrade enables the engagement of asymmetric threats. The CVN 78, CVN 79, and CVN 80 system provides refurbished MK 49 Guided Missile Launching Systems upgraded to MK 49 Mod 3.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	TBD	TBD	May 2021		2	3.951
FY 2018	CVN 80	TBD	TBD	Nov 2023		2	3.951

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	21	May 2021
FY 2018	CVN 80	Sep 2027	25	21	Nov 2023

Competition/Second Source Initiatives:

None

Remarks:

This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: AN/SPQ-9B, ANTI-SHIP MISSILE DEFENSE (ASMD) SURFACE SURVEILLANCE AND TRACKING RADAR	**PARM Code:** PEO IWS2B

P-35 Category	FY 2013		FY 2018	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	1	7.469	1	7.469
Spares		0.450		0.490
System Engineering		0.980		1.066
Technical Engineering Services		0.602		0.655
Other Costs		3.719		4.046
Total	**1**	**13.220**	**1**	**13.726**

Description:

SPQ-9B is a multimode, x-band, narrow beam, pulse Doppler radar that detects and tracks sea-skimming missiles (ASMD) at the horizon in heavy clutter while simultaneously providing detection and tracking of surface targets.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2013	CVN 79	NGES	SS/FFP	Aug 2021		1	7.469
FY 2018	CVN 80	NGES	SS/FFP	Aug 2023		1	7.469

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	18	Aug 2021
FY 2018	CVN 80	Sep 2027	31	18	Aug 2023

Competition/Second Source Initiatives:

None

Remarks:

This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2001 / Carrier Replacement Program
Equipment Item: MK-9 TARGET ILLUMINATOR	**PARM Code:** IWS 3D

P-35 Category	FY 2013 Qty (Each)	FY 2013 Total Cost ($ M)	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)
Major Hardware	4	11.706	4	11.706
Spares		0.878		0.955
Total	**4**	**12.584**	**4**	**12.661**

Description:
MK-9 is an X-Band Illuminator that provides weapon communication and missile illumination.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2013	CVN 79	RAYTHEON	C/FFP	Feb 2021		4	2.927
FY 2018	CVN 80	RAYTHEON	C/FFP	Feb 2023		4	2.927

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2013	CVN 79	Sep 2024	19	24	Feb 2021
FY 2018	CVN 80	Sep 2027	31	24	Feb 2023

Competition/Second Source Initiatives:
None

Remarks:
This system is planned for installation during the CVN 79 Phase II availability. This availability enables use of competition / skilled installation teams, provides for installation of shipboard electronic systems closer to time of the ship's first deployment, and allows for concurrent installation of the combat system and DBR replacement radar suite.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships	**P-1 Line Item Number / Title:** 2013 / Virginia Class Submarine
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A
Other Related Program Elements: 0604558N, 0604580N, 0204281N	
Line Item MDAP/MAIS Code: 516	

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	24	2	2	2	-	2	2	2	2	2	10	48
Gross/Weapon System Cost *($ in Millions)*	62,352.149	5,408.901	5,532.718	6,502.273	0.000	6,502.273	6,384.103	6,483.718	6,505.903	6,653.590	44,493.391	150,316.746
Less PY Advance Procurement *($ in Millions)*	17,515.007	1,623.288	1,647.040	2,128.891	-	2,128.891	1,756.902	1,840.679	1,888.328	1,958.773	12,531.340	42,890.248
Less Cost To Complete *($ in Millions)*	1,844.685	-	-	-	-	-	-	-	-	-	-	1,844.685
Less Economic Order Quantity *($ in Millions)*	2,612.045	597.628	580.363	-	-	-	246.365	540.353	754.063	754.063	1,965.470	8,050.350
Net Procurement (P-1) *($ in Millions)*	40,380.412	3,187.985	3,305.315	4,373.382	0.000	4,373.382	4,380.836	4,102.686	3,863.512	3,940.754	29,996.581	97,531.463
Plus CY Advance Procurement *($ in Millions)*	20,309.395	1,852.234	1,920.596	1,810.941	-	1,810.941	1,887.588	1,945.862	2,140.779	2,185.743	8,837.110	42,890.248
Plus Cost To Complete *($ in Millions)*	1,844.685	-	-	-	-	-	-	-	-	-	-	1,844.685
Plus Economic Order Quantity *($ in Millions)*	3,790.036	-	-	985.460	-	985.460	881.964	427.420	-	-	1,965.470	8,050.350
Total Obligation Authority *($ in Millions)*	**66,324.528**	**5,040.219**	**5,225.911**	**7,169.783**	**0.000**	**7,169.783**	**7,150.388**	**6,475.968**	**6,004.291**	**6,126.497**	**40,799.161**	**150,316.746**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	1,030.709	134.520	118.741	121.745	-	121.745	174.267	168.072	166.266	171.690	2,356.720	4,442.730
Total *($ in Millions)*	**67,355.237**	**5,174.739**	**5,344.652**	**7,291.528**	**-**	**7,291.528**	**7,324.655**	**6,644.040**	**6,170.557**	**6,298.187**	**43,155.881**	**154,759.476**
Gross/Weapon System Unit Cost *($ in Millions)*	2,598.006	2,704.451	2,766.359	3,251.137	-	3,251.137	3,192.052	3,241.859	3,252.952	3,326.795	4,449.339	3,131.599

Description:

MISSION: To seek out and destroy enemy ships across a wide spectrum of tactical scenarios, working both independently and in consort with a battle group/other ships, providing Joint Commanders with early, accurate knowledge of the battlefield on which power may be projected from sea; covert striking power against targets ashore; the capability to establish covertly an expeditionary force on land; and the maritime strength to destroy enemy naval forces and interdict seaborne commerce.

NOTE: These VA Class Exhibits reflect an anticipated FY19-23 MYP strategy for 10 SSNs (2 per year) with EOQ in FY19-21. FY17-22 AP funding for long lead time material and detail design is also included.

NOTE: VPM is an 84 foot hull section with four additional payload tubes, each capable of carrying seven Tomahawk cruise missiles or various other payloads, added to the base Block IV design. VPM helps mitigate the loss of undersea strike capability with the retirement of the Service's four guided missile submarines (SSGNs) in the mid-2020s. VPM will be introduced on the second FY19 hull and subsequently fielded on all follow-on VIRGINIA Class submarines.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships	**P-1 Line Item Number / Title:** 2013 / Virginia Class Submarine	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0604558N, 0604580N, 0204281N
Line Item MDAP/MAIS Code: 516		

Characteristics:	Baseline (B/L)	B/L w/ VPM(SSN803 & out)
Length Overall	377 feet	461 feet
Beam	34 feet	34 feet
Displacement	7830 tons	10174 tons
Draft	32 feet	31 feet

Production Status:	SSN 789	SSN 790	SSN 791	SSN 792	SSN 793	SSN 794	SSN 795
Contract Award Date	Dec 2008	Dec 2008	Dec 2008	Apr 2014	Apr 2014	Apr 2014	Apr 2014
Months to Completion							
a) Award to Delivery	110 months	116 months	122 months	62 months	67 months	73 months	77 months
b) Construction Start to Delivery	65 months	65 months	65 months	61 months	62 months	61 months	60 months
Delivery Date	Feb 2018	Aug 2018	Feb 2019	Jun 2019	Nov 2019	May 2020	Sep 2020
Completion Of Fitting Out	Feb 2018	Aug 2018	Feb 2019	Jun 2019	Nov 2019	May 2020	Sep 2020
Obligation Work Limit Date	Jan 2019	Jul 2019	Jan 2020	May 2020	Oct 2020	Apr 2021	Aug 2021

Production Status:	SSN 796	SSN 797	SSN 798	SSN 799	SSN 800	SSN 801	SSN 802
Contract Award Date	Apr 2014	Apr 2014	Apr 2014	Apr 2014	Apr 2014	Apr 2014	Oct 2018
Months to Completion							
a) Award to Delivery	82 months	88 months	94 months	100 months	106 months	112 months	69 months
b) Construction Start to Delivery	59 months	59 months	59 months	59 months	59 months	59 months	64 months
Delivery Date	Feb 2021	Aug 2021	Feb 2022	Aug 2022	Feb 2023	Aug 2023	Jul 2024
Completion Of Fitting Out	Feb 2021	Aug 2021	Feb 2022	Aug 2022	Feb 2023	Aug 2023	Jul 2024
Obligation Work Limit Date	Jan 2022	Jul 2022	Jan 2023	Jul 2023	Jan 2024	Jul 2024	Jun 2025

Production Status:	SSN 803
Contract Award Date	Oct 2018
Months to Completion	
a) Award to Delivery	78 months
b) Construction Start to Delivery	67 months
Delivery Date	Apr 2025
Completion Of Fitting Out	Apr 2025
Obligation Work Limit Date	Mar 2026

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	N/A	N/A		
Issue Date for TLS	N/A	N/A		
Preliminary Design	Oct 1993	Sep 1995		
Contract Design	Oct 1994	Sep 1996		
Detail Design	Jan 1996	Jun 2004		

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships	**P-1 Line Item Number / Title:** 2013 / Virginia Class Submarine	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0604558N, 0604580N, 0204281N
Line Item MDAP/MAIS Code: 516		

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Request for Proposals	N/A	N/A		
Design Agent	Electric Boat			

Classification of Cost Estimate: C

Justification:
The FY 2019 funding request was reduced by $5.850 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

The increase in FY19 is due to $985 million of EOQ requested for the FY20-FY23 Block V Hulls in similar fashion as prior MYPs. Additionally the FY19 Hulls (SSN 802/803) are lead ships on the Block V contract and the first ships to incorporate Acoustic Superiority which will be implemented for the remainder of the ships in this block. The second FY19 ship (SSN 803) is the first to incorporate VPM and includes Non-recurring VPM Detail Design costs.

The FY 2019 funding request was reduced by $5.850 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	P-1 Line Item Number / Title: 2013 / Virginia Class Submarine	

Cost Categories (†) indicates the presence of a P-8a	FY 2012		FY 2013		FY 2014		FY 2015		FY 2016		FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
Plan Costs	2	176.536	2	183.597	2	167.937	2	177.095	2	183.078	2	180.184	2	187.778	2	495.052
Basic Construction/Conversion		3,306.362		3,236.314		3,492.087		3,335.501		3,384.290		3,430.573		3,508.117		4,134.102
Change Orders		98.600		92.430		104.021		89.481		91.459		73.043		74.536		103.353
Electronics (†)		489.838		499.845		503.718		504.701		514.795		515.852		525.653		536.168
Technology Insertion		25.600		45.500		73.500		28.835		13.535		12.501		18.000		8.500
Propulsion Equipment		878.000		896.000		910.157		970.000		1,025.000		1,032.500		1,051.100		1,046.000
Hull, Mechanical, and Electrical (HM&E) (†)		100.116		98.876		105.248		106.822		109.920		110.190		112.394		119.028
Other Cost		49.158		51.124		52.658		53.233		54.777		54.058		55.140		60.070
Total Ship Estimate		**5,124.210**		**5,103.686**		**5,409.326**		**5,265.668**		**5,376.854**		**5,408.901**		**5,532.718**		**6,502.273**
Less Advance Procurement FY 2010		914.000		-		-		-		-		-		-		-
Less Advance Procurement FY 2011		498.961		932.000		-		-		-		-		-		-
Less Advance Procurement FY 2012		-		473.115		988.246		-		-		-		-		-
Less Advance Procurement FY 2013		-		-		540.376		1,110.000		-		-		-		-
Less Advance Procurement FY 2014		-		-		-		467.014		1,145.000		-		-		-
Less Advance Procurement FY 2015		-		-		-		-		468.536		1,152.500		-		-
Less Advance Procurement FY 2016		-		-		-		-		-		470.788		1,171.100		-
Less Advance Procurement FY 2017		-		-		-		-		-		-		475.940		1,376.294
Less Advance Procurement FY 2018		-		-		-		-		-		-		-		752.597
Less Cost to Complete FY 2014		-		227.000		-		-		-		-		-		-
Less EOQ FY 2009		162.131		162.128		-		-		-		-		-		-
Less EOQ FY 2010		199.789		200.269		-		-		-		-		-		-
Less EOQ FY 2011		128.015		122.920		-		-		-		-		-		-
Less EOQ FY 2014		-		-		-		158.400		219.380		194.909		169.909		-
Less EOQ FY 2015		-		-		-		-		197.568		251.603		231.618		-
Less EOQ FY 2016		-		-		-		-		-		151.116		178.836		-
Net P-1 Funding		**3,221.314**		**2,986.254**		**3,880.704**		**3,530.254**		**3,346.370**		**3,187.985**		**3,305.315**		**4,373.382**

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2013 / Virginia Class Submarine

Remarks:

The increase in FY19 Total Ship estimates is due to being the lead ships on the Block V MYP contract (for the FY19 thru FY23 ships) and the first ships to incorporate Acoustic Superiority. The second FY19 SSN also includes the VPM Detail Design (a $291M non-recurring cost within the Plans line) and the first ship of the class to incorporate VPM recurring costs to be continued on all follow on SSNs. The addition of VPM impacts construction costs in Plans, Basic, Change Orders, HM&E for additional T&E requirements, and in Other for additional Logistics requirements.

Exhibit P-27, Ship Production Schedule: PB 2019 Navy				Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1			P-1 Line Item Number / Title: 2013 / Virginia Class Submarine		
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
SSN 789	EB/HII-NNS	2012	Dec 2008	Sep 2012	Feb 2018
SSN 790	EB/HII-NNS	2013	Dec 2008	Mar 2013	Aug 2018
SSN 791	EB/HII-NNS	2013	Dec 2008	Sep 2013	Feb 2019
SSN 792	EB/HII-NNS	2014	Apr 2014	May 2014	Jun 2019
SSN 793	EB/HII-NNS	2014	Apr 2014	Sep 2014	Nov 2019
SSN 794	EB/HII-NNS	2015	Apr 2014	Apr 2015	May 2020
SSN 795	EB/HII-NNS	2015	Apr 2014	Sep 2015	Sep 2020
SSN 796	EB/HII-NNS	2016	Apr 2014	Mar 2016	Feb 2021
SSN 797	EB/HII-NNS	2016	Apr 2014	Sep 2016	Aug 2021
SSN 798	EB/HII-NNS	2017	Apr 2014	Mar 2017	Feb 2022
SSN 799	EB/HII-NNS	2017	Apr 2014	Sep 2017	Aug 2022
SSN 800	EB/HII-NNS	2018	Apr 2014	Mar 2018	Feb 2023
SSN 801	EB/HII-NNS	2018	Apr 2014	Sep 2018	Aug 2023
SSN 802	EB/HII-NNS	2019	Oct 2018	Mar 2019	Jul 2024
SSN 803	EB/HII-NNS	2019	Oct 2018	Sep 2019	Apr 2025
SSN 804	EB/HII-NNS	2020	Oct 2018	Mar 2020	Jun 2025
SSN 805	EB/HII-NNS	2020	Oct 2018	Sep 2020	Dec 2025
SSN 806	EB/HII-NNS	2021	Oct 2018	Mar 2021	Jun 2026
SSN 807	EB/HII-NNS	2021	Oct 2018	Sep 2021	Dec 2026
SSN 808	EB/HII-NNS	2022	Oct 2018	Mar 2022	Jun 2027
SSN 809	EB/HII-NNS	2022	Oct 2018	Sep 2022	Dec 2027
SSN 810	EB/HII-NNS	2023	Oct 2018	Mar 2023	Jun 2028
SSN 811	EB/HII-NNS	2023	Oct 2018	Sep 2023	Dec 2028

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2013 / Virginia Class Submarine

Electronics	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
P-35 Items						
Sonar, Combat Control & Architecture	2	211.792	2	215.816	2	220.132
Electronic Support Measures (ESM)	2	57.854	2	58.954	2	60.134
Photonics Masts	2	38.909	2	39.648	2	40.442
Universal Modular Mast (UMM)	2	22.190	2	22.612	2	23.064
Exterior Communications System (ECS) Recurring	2	52.491	2	53.488	2	54.558
P-35 Items Subtotal		**383.236**		**390.518**		**398.330**
Major Items						
System Level Activities	2	38.953	2	39.692	2	40.486
AN/BPS-16	2	5.972	2	6.086	2	6.208
Navigation	2	6.773	2	6.902	2	7.040
CWITT	2	44.050	2	44.888	2	45.786
Non-Propulsion Electronics System, Systems Engineering and Integration (NPES SE&I)	2	34.476	2	35.130	2	35.832
Major Items Subtotal		**130.224**		**132.698**		**135.352**
Other Cost Elements						
Misc Electronics	0	2.392	0	2.437	0	2.486
Other Cost Elements Subtotal		**2.392**		**2.437**		**2.486**
Total Electronics		**515.852**		**525.653**		**536.168**

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	P-1 Line Item Number / Title: 2013 / Virginia Class Submarine

Hull, Mechanical, and Electrical (HM&E)	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
P-35 Items						
Propulsor	2	76.348	2	77.876	2	79.434
P-35 Items Subtotal		**76.348**		**77.876**		**79.434**
Major Items						
CSA MK2		3.234		3.298		3.364
Major Items Subtotal		**3.234**		**3.298**		**3.364**
Other Cost Elements						
HM&E Installation and testing		19.120		19.502		19.892
T&E		9.322		9.508		14.084
SUPSHIP responsible material		2.166		2.210		2.254
Other Cost Elements Subtotal		**30.608**		**31.220**		**36.230**
Total Hull, Mechanical, and Electrical (HM&E)		**110.190**		**112.394**		**119.028**

Remarks:

The FY19 increase in HM&E is driven by additional T&E requirements associated with VPM beginning with the SSN803 due to Block V requirements for Peculiar Support Equipment (PSE) /Special Support Equipment (SSE) that is delivered with each ship increase from (2) All Up Round Simulators (AURS) and 10 All Up Round Ballast, Grade B (AURBb) for Block III/IV to (6) AURS and (34) AURBb. This support equipment is required to be delivered with each ship in order to support testing for the VIRGINIA Payload Tubes when they are not loaded with ordnance.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2013 / Virginia Class Submarine
Equipment Item: Sonar, Combat Control & Architecture	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	2	172.703	2	175.984	2	179.504
Technical Engineering Services		3.092		3.151		3.214
Other Costs		35.997		36.681		37.414
Total	**2**	**211.792**	**2**	**215.816**	**2**	**220.132**

Description:

The VIRGINIA Class Command, Control, Communications and Intelligence (C3I) System is the electronics suite which will provide required operational and warfighting capability for the Navy's newest attack submarine. The C3I System includes 15 subsystems (23 if all electronically interfaced subsystems are included) integrated by an overarching Architecture Subsystem. This P-35 covers the procurement requirements for the following: C3I Prime Contractor Furnished Equipment (Sonar, Combat Control and Architecture subsystems) and associated Government Furnished Equipment; technical data documentation; spares; technical engineering services; design engineering services; field engineering services; management support services; and shipboard certification efforts.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2017	SSN 798	Lockheed Martin	C/CPIF	Jan 2017	Option	2	48.068
FY 2018	SSN 800	Lockheed Martin	C/CPIF	Jan 2018	Option	2	48.892
FY 2019	SSN 802	Competitive	C/CPIF	Jan 2019	New	2	49.870

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	SSN 798	Feb 2022	26	32	May 2017
FY 2018	SSN 800	Feb 2023	26	32	May 2018
FY 2019	SSN 802	Jul 2024	26	32	Oct 2019

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2013 / Virginia Class Submarine
Equipment Item: Electronic Support Measures (ESM)	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
Major Hardware	2	43.877	2	44.712	2	45.606
Technical Engineering Services		2.458		2.504		2.554
Other Costs		11.519		11.738		11.974
Total	**2**	**57.854**	**2**	**58.954**	**2**	**60.134**

Description:

The VIRGINIA Class Command, Control, Communications and Intelligence (C3I) System is the electronics suite which will provide required operational and warfighting capability for the Navy's newest attack submarine. The C3I System includes 15 subsystems (23 if all electronically interfaced subsystems are included) integrated by an overarching Architecture Subsystem. This P-35 covers the procurement requirements for the following: Electronic Support Measures subsystem Prime Contractor Furnished Equipment, and associated Government Furnished Equipment; technical data documentation; spares; systems engineering; technical engineering services; computer program support; system test & evaluation; field engineering services; management support services; shipboard certification efforts; quality assurance and reliability/maintainability assurance; maintenance of technical data; and contractor support services efforts. This system provides the capability to process a variety of electromagnetic signal types over a wide frequency range in support of all applicable submarine mission areas.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	SSN 798	Lockheed Martin	C/FFP	Jan 2016	Option	2	21.939
FY 2018	SSN 800	Lockheed Martin	C/FFP	Jan 2016	Option	2	22.356
FY 2019	SSN 802	Competitive	C/FFP	Dec 2019	New	2	22.803

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	SSN 798	Feb 2022	26	24	Dec 2017
FY 2018	SSN 800	Feb 2023	26	24	Dec 2018
FY 2019	SSN 802	Jul 2024	26	24	May 2020

Competition/Second Source Initiatives:

Multi-Functional Modular Mast (MMM) competitive contract was awarded to Lockheed Martin - Mission Systems and Training (LM-MST) in January 2016 for SSNs 794 thru 801.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2013 / Virginia Class Submarine
Equipment Item: Photonics Masts	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	2	26.899	2	27.410	2	27.958
Technical Engineering Services		1.207		1.230		1.256
Other Costs		10.803		11.008		11.228
Total	**2**	**38.909**	**2**	**39.648**	**2**	**40.442**

Description:

The VIRGINIA Class Command, Control, Communications and Intelligence (C3I) System is the electronics suite which will provide required operational and warfighting capability for the Navy's newest attack submarine. The C3I System includes 15 subsystems (23 if all electronically interfaced subsystems are included) integrated by an overarching Architecture Subsystem. This P-35 covers the procurement requirements for the following: Photonics subsystem Prime Contractor Furnished Equipment; spares; systems engineering; technical engineering services; computer program support; field engineering services; management support services; shipboard certification; maintenance of technical data; and contractor support services efforts. This system consists of two outboard mast/antenna/camera assemblies and the associated inboard processing and display equipment. This system supports visual and infrared (IR) imaging, RF signal communications, early warning and contact direction finding capability.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2017	SSN 798	L-3 KEO	C/FFP	Apr 2015	Option	2	13.450
FY 2018	SSN 800	L-3 KEO	C/FFP	Apr 2015	Option	2	13.705
FY 2019	SSN 802	Competitive	C/FFP	Apr 2019	New	2	13.979

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	SSN 798	Feb 2022	26	24	Dec 2017
FY 2018	SSN 800	Feb 2023	26	24	Dec 2018
FY 2019	SSN 802	Jul 2024	26	24	May 2020

Competition/Second Source Initiatives:

Low Profile Photonics Mast (LPPM): Full and Open competition contract awarded in April 2015 for SSNs 794 thru 801. Includes common diploop/Electrical Hull Penetrator (EHP) plan as part of contract to maintain future mast flexibility and antenna assembly and ESM mast components.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2013 / Virginia Class Submarine
Equipment Item: Universal Modular Mast (UMM)	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	2	16.537	2	16.852	2	17.189
Technical Engineering Services		2.743		2.795		2.851
Other Costs		2.910		2.965		3.024
Total	**2**	**22.190**	**2**	**22.612**	**2**	**23.064**

Description:

The VIRGINIA Class Command, Control, Communications and Intelligence (C3I) System is the electronics suite which will provide required operational and warfighting capability for the Navy's newest attack submarine. The C3I System includes 15 subsystems (23 if all electronically interfaced subsystems are included) integrated by an overarching Architecture Subsystem. This P-35 covers the procurement requirements for the following: Modular Mast Prime Contractor Furnished Equipment; technical data documentation; spares; systems engineering; technical engineering services; management support services; shipboard certification; and maintenance of technical data efforts. This system consists of eight common masts for purposes of housing, raising and lowering antenna and other sensor units.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2017	SSN 798	L-3 KEO	SS/FP	Jun 2015	Option	2	8.269
FY 2018	SSN 800	L3-KEO	SS/FP	Jun 2015	Option	2	8.426
FY 2019	SSN 802	L3-KEO	SS/FP	Apr 2019	New	2	8.595

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	SSN 798	Feb 2022	37	21	Apr 2017
FY 2018	SSN 800	Feb 2023	37	21	Apr 2018
FY 2019	SSN 802	Jul 2024	37	21	Sep 2019

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2013 / Virginia Class Submarine
Equipment Item: Exterior Communications System (ECS) Recurring	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
Major Hardware	2	35.210	2	35.879	2	36.597
Technical Engineering Services		5.970		6.083		6.204
Other Costs		11.311		11.526		11.757
Total	**2**	**52.491**	**2**	**53.488**	**2**	**54.558**

Description:

The VIRGINIA Class Command, Control, Communications and Intelligence (C3I) System is the electronics suite which will provide required operational and warfighting capability for the Navy's newest attack submarine. The C3I System includes 15 subsystems (23 if all electronically interfaced subsystems are included) integrated by an overarching Architecture Subsystem. Exterior Communications Systems (ECS) is an integration effort with multiple Government-Off-The-Shelf (GOTS) components providing the core ECS capability. The GOTS components of ECS will be provided using existing contracts. For the ECS integration effort, Stanley Associates (North Charleston, SC) is prime for fabrication and production. This P-35 covers the procurement requirements for the following: ECS GOTS equipment; fabrication/ production; systems engineering; system test & evaluation; training; data; technical engineering services; spares and repair parts; and program management. This system provides the capability for seamless, transparent, secure connectivity for information exchange between submarine users and the Global Command and Communications System (GCCS)

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	SSN 798	SAIC	C/IDIQ	May 2019	Option	2	17.605
FY 2018	SSN 800	SAIC	C/IDIQ	May 2020	Option	2	17.940
FY 2019	SSN 802	Competitive	C/IDIQ	May 2021	New	2	18.299

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	SSN 798	Feb 2022	24	9	May 2019
FY 2018	SSN 800	Feb 2023	24	9	May 2020
FY 2019	SSN 802	Jul 2024	24	9	Oct 2021

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2013 / Virginia Class Submarine
Equipment Item: Propulsor	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	2	66.034	2	67.356	2	68.704
TECH ENGINEERING SERVICES		10.314		10.520		10.730
Total	**2**	**76.348**	**2**	**77.876**	**2**	**79.434**

Description:

The propulsor consists of Ni-Al-bronze blades and a large steel and inconel fabrication piece. The purpose of the propulsor is to generate proper thrust to propel the ship at a rated speed within the approved limits of torque and shaft RPM, while at the same time meeting acoustic and structural requirements. This design is unique to the VIRGINIA Class. The propulsor consists of a large quantity of government supplied material and a contract for the fixed portion construction and assembly.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2017	SSN 798	BAE Systems	C/FFP	Apr 2016	Option	2	25.500
FY 2018	SSN 800	BAE Systems	C/FFP	Apr 2016	Option	2	26.350
FY 2019	SSN 802	BAE Systems	C/FFP	Apr 2016	Option	2	26.888

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	SSN 798	Feb 2022	35	30	Sep 2016
FY 2018	SSN 800	Feb 2023	35	30	Sep 2017
FY 2019	SSN 802	Jul 2024	40	30	Sep 2018

Competition/Second Source Initiatives:

N/A

Remarks:

The BAE Systems contract, which consists of SSNs 794-803 (FY15-19), was executed in June 2015 as an undefinitized contract action (UCA) for the long lead time material (LLTM) for SSN 794 and SSN 795. The contract definitized in April 2016 for LLTM and Manufacturing and Delivery efforts for SSNs 794-803.

Exhibit P-10, Advance Procurement Requirements Analysis (*page 1 - Budget Funding Justification*): PB 2019 Navy			Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1		**P-1 Line Item Number / Title:** 2013 / Virginia Class Submarine	
First System (2019) Award Date:	**First System (2019) Completion Date:**	**Interval Between Systems:** 0 Months	

Cost Elements	Production Leadtime (Months)	When Required* (Months)	FY 2017 ($ M)	FY 2018 ($ M)	FY 2019 ($ M)	FY 2020 ($ M)	FY 2021 ($ M)	FY 2022 ($ M)	FY 2023 ($ M)
Advance Procurement									
Nuclear Propulsion Plant Equipment (1)	30-72	Various	1,046.000	1,047.000	1,083.600	1,122.000	1,161.000	1,202.000	1,244.000
Electronics Equipment (2)	37-43	Various	28.214	28.778	29.354	29.940	30.540	31.150	31.774
NON-Nuclear Propulsion Plant Equipment - Propulsor (3)	36	Various	43.100	43.962	44.840	45.738	46.653	47.586	48.538
Long Lead-Time CFE One Year AP (4)	24-42	Various	404.626	589.347	514.709	542.963	542.188	553.556	728.071
Long Lead-Time CFE Two Year AP (4)	24-42	Various	236.624	120.999	138.438	146.947	165.481	306.487	133.360
VPM Detail Design (5)	24-36	Various	93.670	90.510	0.000	-	-	-	-
Total: Advance Procurement			*1,852.234*	*1,920.596*	*1,810.941*	*1,887.588*	*1,945.862*	*2,140.779*	*2,185.743*
Economic Order of Quantity									
EOQ (6)	-	Various	-	-	985.460	881.964	427.420	-	-
Total: Economic Order of Quantity			-	-	*985.460*	*881.964*	*427.420*	-	-
Total Advance Procurement/Obligation Authority			**1,852.234**	**1,920.596**	**2,796.401**	**2,769.552**	**2,373.282**	**2,140.779**	**2,185.743**

*Note: "When Required" is the number of months required before ship delivery.

Exhibit P-10, Advance Procurement Requirements Analysis (*page 2 - Budget Funding Justification*): PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2013 / Virginia Class Submarine

Cost Elements	FY 2019 Production Leadtime (Months)	When Required* (Months)	Unit Cost ($ M)	Contract Forecast Date	2019 Qty (Each)	For FY	Total Cost Request ($ M)
Advance Procurement							
Nuclear Propulsion Plant Equipment (1)	30-72	Various	-	Oct 2018	-	2021	1,083.600
Electronics Equipment (2)	37-43	Various	-	Dec 2018	-	2020	29.354
NON-Nuclear Propulsion Plant Equipment - Propulsor (3)	36	Various	-	Dec 2018	-	2020	44.840
Long Lead-Time CFE One Year AP (4)	24-42	Various	-	Jan 2019	-	2020	514.709
Long Lead-Time CFE Two Year AP (4)	24-42	Various	-	Jan 2019	-	2021	138.438
VPM Detail Design (5)	24-36	Various	-	Jan 2019	-	2019	0.000
Total: Advance Procurement							*1,810.941*
Economic Order of Quantity							
EOQ (6)	-	Various	-		-		985.460
Total: Economic Order of Quantity							*985.460*
Total Advance Procurement/Obligation Authority							**2,796.401**

Description:

*Note: "When Required" is the number of months required before ship delivery.

Footnotes:

(1) Nuclear Propulsion Plant Equipment AP is required to fund long-lead time propulsion plant equipment, which is the longest lead-time equipment required for construction of nuclear attack submarines, and ensure production capability that supports projected production quantities. To support the VIRGINIA Class' innovative and more efficient modular construction method, reactor plant components must be delivered earlier in the construction process than previous submarine classes. Under the new method, the VIRGINIA Class reactor plant is assembled and tested before being mounted and installed in the hull. Naval Reactors is in the midst of decreasing procurements for reactor plant GFE, primarily a result of fewer aircraft carrier and submarine refuelings. Between FY15 and FY21, production volume at the Program's reactor core vendor will decrease by ~33% or nearly 500,000 manhours and require allocation of overhead across fewer product lines, resulting in increased costs per ship set. This period of higher overhead allocation coincides with the manufacturing periods of the six planned equipment ship sets to be procured using the FY19-21 SCN AP. This burden is reflected in the estimated escalation rate used to derive the required AP funding in those years. Naval Reactors is actively managing and assessing the required reactor core manufacturing capabilities to identify overhead efficiencies and reduce costs.

(2) Electronics Equipment AP is required to fund the long-lead time material for the Command and Control System Module (CCSM). AP for the CCSM plays a critical role in early system installation and test in order to keep the CCSM out of the critical path to ship delivery and minimize risk to ship construction. AP is required to procure selected electronics and associated pre-cable kits, cabling, connector plates and mechanical structures to be installed in this module in accordance with Shipyard Required in Yard Dates (RIYD). Pre-cable kits allow the shipyard to establish cable runs and checkout platform interfaces prior to electronics installation. Mechanical structures establish footprint unique packaging to allow electronics to install efficiently. Additionally, this 1 YR AP is for long lead items such as metal fabrication parts (mechanical structures, chassis, drawer slides, mounting hardware), power supplies and cable connectors, subcontract items (Aft Sonar Receive Unit), and acoustic hull sensors (iRoc Sensors, DT-574 LAB Hydrophone).

(3) Non-Nuclear Propulsion Plant Equipment Propulsor AP is required to satisfy in-yard need dates for ship delivery. Other prior year non-nuclear propulsion plant equipment has been negotiated as CFE in the Construction Contract.

Exhibit P-10, Advance Procurement Requirements Analysis (*page 2 - Budget Funding Justification*): PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2013 / Virginia Class Submarine

(4) Long Lead-Time CFE AP is required to fund long lead time contractor furnished material including the Weapons Handling and Reactor Plant Modules and the Main Propulsion Unit (MPU)/Ship Service Turbine Generator (SSTG). Additionally VPM LLTM CFE in FY17 - FY22 required to support the increased material procurement (i.e. electrical, valves, flanges, fittings, pipe, fabricated parts, hardware, and tools, etc.) associated with the increased VPM workload and to maintain anticipated ship construction schedules is included. These and other components are required early in the construction phase to meet the delivery schedule.

(5) Virginia Payload Module (VPM) AP is required for Detail Design in FY17 & FY18 for Block V.

(6) EOQ is for Economic Order Quantity for large lot procurements of shipbuilder material and major Government Furnished Equipment to achieve savings under the MYP contract. Examples of shipbuilder large lot procurements include items such as Electrical (cable, wire, fittings, switches, instrumentation, connectors, resistors, etc.); Valves, flanges and fittings, piping; Fabricated Parts (bearings, sound isolation mounts, pipe hanged assemblies, machined parts); Hardware and Tools (fasteners, marine fittings, locks, latches, small tools). Examples of GFE large lot procurements include items such as: Sonar - Large Aperture Bow (LAB) Arrays and associated bottles, Light Weight Wide Aperture Array (LWWAA) Receivers & electronic components (network servers, switches) ECS - High Data Rate (HDR) Antennas, Digital Modular Radios (DMRs) & associated power amplifiers, Navy Multiband Terminals (NMTs), and Multi-function Masts (MFMs) OE-538. ESM - Photonics ESM Performance Improvement (PEPI)-3 systems and Multifunctional Modular Masts (MMMs) Photonics Masts - outboard equipment only, such as Diploops along with complex electronic & mechanical components that are required to manufacture the Photonics masts

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A
Other Related Program Elements: N/A	
Line Item MDAP/MAIS Code: N/A	

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	6	-	-	-	-	-	-	1	-	-	2	9
Gross/Weapon System Cost *($ in Millions)*	22,788.217	0.000	0.000	0.000	0.000	0.000	0.000	5,029.786	0.000	0.000	11,805.532	39,623.535
Less PY Advance Procurement *($ in Millions)*	5,275.519	-	-	-	-	-	-	1,364.629	-	-	2,320.463	8,960.611
Less Cost To Complete *($ in Millions)*	180.598	-	-	-	-	-	-	-	-	-	-	180.598
Less Subsequent Year Full Funding *($ in Millions)*	10,163.210	-	-	-	-	-	-	1,863.050	-	-	-	12,026.260
Less Transfer *($ in Millions)*	128.131	-	-	-	-	-	-	-	-	-	-	128.131
Net Procurement (P-1) *($ in Millions)*	7,040.759	0.000	0.000	0.000	0.000	0.000	0.000	1,802.107	0.000	0.000	9,485.069	18,327.935
Plus Subsequent Year Full Funding *($ in Millions)*	6,859.200	1,699.120	1,604.890	-	-	-	-	-	1,863.050	-	-	12,026.260
Full Funding TOA *($ in Millions)*	13,899.959	1,699.120	1,604.890	-	-	-	-	1,802.107	1,863.050	-	9,485.069	30,354.195
Plus CY Advance Procurement *($ in Millions)*	5,290.470	233.149	75.897	449.597	-	449.597	607.963	234.679	538.987	769.835	760.034	8,960.611
Plus Cost To Complete *($ in Millions)*	180.598	-	-	-	-	-	-	-	-	-	-	180.598
Plus Transfer *($ in Millions)*	128.131	-	-	-	-	-	-	-	-	-	-	128.131
Total Obligation Authority *($ in Millions)*	**19,499.158**	**1,932.269**	**1,680.787**	**449.597**	**0.000**	**449.597**	**607.963**	**2,036.786**	**2,402.037**	**769.835**	**10,245.103**	**39,623.535**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	68.498	34.416	6.486	20.048	-	20.048	32.615	40.472	26.829	23.600	69.621	322.585
Total *($ in Millions)*	**19,567.656**	**1,966.685**	**1,687.273**	**469.645**	**-**	**469.645**	**640.578**	**2,077.258**	**2,428.866**	**793.435**	**10,314.724**	**39,946.120**
Gross/Weapon System Unit Cost *($ in Millions)*	3,798.036	-	-	-	-	-	-	5,029.786	-	-	5,902.766	4,402.615

Description:

To support and operate aircraft to engage in attacks on targets afloat and ashore which threaten our use of the sea and to engage in sustained operations in support of other forces. The refueling of the reactors and repair and upgrade of the main propulsion equipment will provide for reliable operations during its remaining 23 plus years of ship life using only the normal maintenance cycle.

The CVN 74 RCOH start date shifted ten months from March 2020 to January 2021.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Characteristics:

	CVN 73
Length Overall	1092 ft
Beam	252 ft
Displacement	101,200 LT
Draft	39.96 ft

Systems:

Electronics

-C4ISR
-INTEGRATED COMMUNICATION NETWORK (ICAN / DDCN & IVCN)
-SHIP SELF DEFENSE SYSTEM (SSDS) MK2 MOD 1E
-ELECTRONIC CONSOLIDATED AUTOMATED SUPPORT SYSTEM (ECASS)
-AN/SPN-46 OVERHAUL/UPGRADE
-AN/USG-2B - COOPERATIVE ENGAGEMENT CAPABILITY (CEC)
-JOINT PRECISION APPROACH AND LANDING SYSTEM (JPALS)
-AN/USQ-T (SERIES) - BATTLE FORCE TACTICAL TRAINER (BFTT)
-AN/SLQ-59 - ELECTRONIC WARFARE (EW) SYSTEM
-AN/SPN-41 REFURBISHMENT
-AN/SPN-43C REFURBISHMENT
-AN/SLQ-32A(V)4 - ELECTRONIC WARFARE SUITE
-NAVAL STRIKE WARFARE PLANNING CENTER (NSWPC)
-AN/UPX-29 - IDENTIFICATION FRIEND OR FOE (IFF) INTERROGATOR SET
-AN/TPX-42(V)15 UPGRADE
-JOINT STRIKE FIGHTER AUTONOMIC LOGISTICS INFORMATION SYSTEM (JSF-ALIS)

Hull, Mechanical, and Electrical (HM&E)

-AIRCRAFT ELECTRICAL SERVICE STATION (AESS) INSTALL
-FURNITURE (NON PROPULSION PLANT)
-LOW PRESSURE AIR PLANT (LPAP)
-AUTOMATIC VOLTAGE REGULATOR (AVR)
-PASSIVE COUNTER MEASURE SYSTEM (PCMS)
-COMBAT SYSTEMS SUPPORT CENTER (CSSC) RIPOUT/INSTALL
-CARRIER INTELLIGENCE CENTER (CVIC) RIPOUT/INSTALL
-AFT CREW MESS
-LAUNDRY DRYERS (SCD 3186)
-MEDICAL AND DENTAL SUITE
-NODE ROOM RIPOUT/INSTALL
-COMBI-OVENS
-ACE PLC CONTROL SYSTEM UPGRADE
-DECK EDGE DOOR UPGRADE

Ordnance

-AVIATION EQUIPMENT & SUPPORT
-NATO SEASPARROW SURFACE MISSILE SYSTEM (NSSMS)
-AN/SPS-48G - 3D AIR SEARCH RADAR
-AN/SPS-49(V)1 OVERHAUL/REFURBISHMENT
-AN/SPQ-14 - ADVANCED SENSOR DISTRIBUTION SYSTEM (ASDS)
-COMBAT DIRECTION CENTER (CDC)/FLAG RIPOUT/INSTALL
-AN/SPQ-9B - ANTI-SHIP CRUISE MISSILE DEFENSE RADAR
-SEAT SHOP MODIFICATIONS (JSF CVN)/PILOT EQUIPMENT AND HELM
-MK38 MOD 2 GUN SYSTEM
-AN/SQQ-34C - CARRIER TACTICAL SUPPORT CENTER
-RAM GUIDED MISSILE LAUNCHING SYSTEM

Production Status:	CVN 73
Contract Award Date	Aug 2017
Months to Completion	
a) Award to Delivery	48 months
b) Construction Start to Delivery	48 months
Delivery Date	Aug 2021
Completion Of Fitting Out	Oct 2021
Obligation Work Limit Date	Sep 2022

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	Jan 2000	Feb 2000	Mar 2000	Apr 2000

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy			Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships		P-1 Line Item Number / Title: 2086 / CVN Refueling Overhauls	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A	
Line Item MDAP/MAIS Code: N/A			

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLS	Jan 2001	Feb 2001	Mar 2001	Apr 2001
Preliminary Design	Jan 2002	Feb 2002	N/A	N/A
Contract Design	Jan 2003	Feb 2003	N/A	N/A
Detail Design	Jan 2004	Feb 2004	N/A	Apr 2004
Request for Proposals	Jan 2005	Feb 2005	Mar 2005	N/A
Design Agent	[Design Agent]			

Classification of Cost Estimate: [cost estimate]

Justification:
CVN 73 RCOH duration was increased from 45 to 48 months. The extension was necessitated by defueling process changes and the addition of nuclear component repairs in the RCOH work package.

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy		**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls	

Cost Categories (†) indicates the presence of a P-8a	**FY 2016**	
	Qty *(Each)*	**Total Cost** *($ M)*
Plan Costs	1	66.241
Basic Construction/Conversion		3,865.255
Electronics (†)		320.013
Propulsion Equipment		148.500
Hull, Mechanical, and Electrical (HM&E) (†)		138.307
Ordnance (†)		119.294
Other Cost		97.307
Total Ship Estimate		**4,754.917**
Less Advance Procurement FY 2012		14.008
Less Advance Procurement FY 2013		69.918
Less Advance Procurement FY 2014		245.793
Less Advance Procurement FY 2015		483.600
Less Subsequent Full Funding FY 2017		1,699.120
Less Subsequent Full Funding FY 2018		1,604.890
Net P-1 Funding		**637.588**

Exhibit P-27, Ship Production Schedule: PB 2019 Navy			Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1		P-1 Line Item Number / Title: 2086 / CVN Refueling Overhauls			
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
CVN 73	HUNTINGTON INGALLS INDUSTRIES	2016	Aug 2017	Aug 2017	Aug 2021
CVN 74	HUNTINGTON INGALLS INDUSTRIES	2021	Jan 2021	Jan 2021	Jan 2025

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls

Electronics	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
P-35 Items		
C4ISR	1	107.433
INTEGRATED COMMUNICATION NETWORK (ICAN / DDCN & IVCN)	1	56.806
SHIP SELF DEFENSE SYSTEM (SSDS) MK2 MOD 1E	1	43.466
ELECTRONIC CONSOLIDATED AUTOMATED SUPPORT SYSTEM (ECASS)	1	36.625
AN/SPN-46 OVERHAUL/UPGRADE	1	12.857
AN/USG-2B - COOPERATIVE ENGAGEMENT CAPABILITY (CEC)	1	11.592
JOINT PRECISION APPROACH AND LANDING SYSTEM (JPALS)	1	9.091
AN/USQ-T (SERIES) - BATTLE FORCE TACTICAL TRAINER (BFTT)	1	7.653
AN/SLQ-59 - ELECTRONIC WARFARE (EW) SYSTEM	1	6.304
AN/SPN-41 REFURBISHMENT	1	5.751
P-35 Items Subtotal		**297.578**
Major Items		
AN/SPN-43C REFURBISHMENT	1	4.044
AN/SLQ-32A(V)4 - ELECTRONIC WARFARE SUITE	1	3.607
NAVAL STRIKE WARFARE PLANNING CENTER (NSWPC)	1	3.110
AN/UPX-29 - IDENTIFICATION FRIEND OR FOE (IFF) INTERROGATOR SET		1.915
AN/TPX-42(V)15 UPGRADE	1	1.797
JOINT STRIKE FIGHTER AUTONOMIC LOGISTICS INFORMATION SYSTEM (JSF-ALIS)	1	1.667
Major Items Subtotal		**16.140**
Other Cost Elements		
TEST & CERTIFICATIONS, MISC.		6.295
Other Cost Elements Subtotal		**6.295**
Total Electronics		**320.013**

Remarks:

P-35 items displayed decreased by $10.276M from PB18. Net decrease results from significant reductions in C4ISR ($7.500M), ICAN / DDCN & IVCN ($5.000M), and SSDS ($2.735M); smaller reductions in SPN-46, CEC, JPALS, and BFTT total $2.100M; combined with an increase to SPN-41 and added requirement of SLQ-59.

Major items decreased from PB18 submission by $3.632M. NSWPC was reduced by $4.308M and other minor net increases across multiple systems.

AN/SPN-43C REFURBISHMENT: Modernization effort, which provides for safe and reliable all-weather final approach and landing of carrier-based aircraft during day and night flight operations. The increase reflects Navy's decision to re-assign the work from the RCOH prime contractor (HII-NNS) to a 25% lower cost government sponsored Alteration Installation Team (AIT). The cost of this work was included in the P-5C Basic Construction category and was reassigned to a lower cost AIT as reflected in the President's Budget for FY18.

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls

AN/SLQ-32A(V)4 - ELECTRONIC WARFARE SUITE: Overall decrease as a result of cost reduction initiative that achieved savings in program management related efforts.

NAVAL STRIKE WARFARE PLANNING CENTER (NSWPC): Overall decrease as a result of cost reduction initiative that achieved savings in program management related efforts. NSWPC systems are mature and no longer require the additional integration provided by the NSWPC Production Integration Facility (PIF). Along with the PIF, non-program of record (POR) Bravo Papa System was de-scoped from the RCOH.

AN/UPX-29 - IDENTIFICATION FRIEND OR FOE (IFF) INTERROGATOR SET: Overall decrease as a result of cost reduction initiative that achieved savings in program management related efforts. System removal, refurbishment and re-installation is required for the RCOH. IFF is located in an area of high industrial activity and must be removed from the ship to prevent equipment damage.

AN/TPX-42(V)15 UPGRADE: Technical engineering services were updated to reflect an increase in AIT effort. AIT effort in PB16 was from an estimate based on historical efforts. After the submission of PB18, the estimate based on a detailed review of CVN 73 RCOH specific drawings was completed.

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls

Hull, Mechanical, and Electrical (HM&E)	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
P-35 Items		
AIRCRAFT ELECTRICAL SERVICE STATION (AESS) INSTALL	1	14.452
FURNITURE (NON PROPULSION PLANT)	1	11.274
LOW PRESSURE AIR PLANT (LPAP)	1	6.363
AUTOMATIC VOLTAGE REGULATOR (AVR)	1	4.340
P-35 Items Subtotal		**36.429**
Major Items		
PASSIVE COUNTER MEASURE SYSTEM (PCMS)	1	5.630
COMBAT SYSTEMS SUPPORT CENTER (CSSC) RIPOUT/INSTALL	1	3.851
CARRIER INTELLIGENCE CENTER (CVIC) RIPOUT/INSTALL	1	3.621
AFT CREW MESS	1	3.422
LAUNDRY DRYERS (SCD 3186)	1	2.720
MEDICAL AND DENTAL SUITE	1	2.356
NODE ROOM RIPOUT/INSTALL	1	1.988
COMBI-OVENS	1	1.853
ACE PLC CONTROL SYSTEM UPGRADE	1	1.788
DECK EDGE DOOR UPGRADE	1	1.729
Major Items Subtotal		**28.958**
Other Cost Elements		
ENGINEERING, TEST & CERTIFICATION		55.883
MISCELLANEOUS GOVERNMENT FURNISHED EQUIPMENT (GFE)		17.037
Other Cost Elements Subtotal		**72.920**
Total Hull, Mechanical, and Electrical (HM&E)		**138.307**

Remarks:

P-35 items displayed increased by $1.465M from PB18. Net increase results from LPAP increase of $2.213M and minor decreases to other P-35 items.

Major items decreased from PB18 submission by $1.773M. Three GFE systems previously listed as Major items were moved to Other Costs. Decrease also includes $5.370M reduction to PCMS.

PASSIVE COUNTER MEASURE SYSTEM (PCMS): Decreased by $5.370M from PB18 due to significant reduction to procurement of hardware (PCMS tiles).

COMBAT SYSTEMS SUPPORT CENTER (CSSC) RIPOUT/INSTALL: Formerly "C4I Comm Center Partial Rearrangement (CSSC Ripout/Install)."

CARRIER INTELLIGENCE CENTER (CVIC) RIPOUT/INSTALL: Formerly "C4I CVIC Partial Reconfiguration (Ripout/Install)."

NODE ROOM RIPOUT/INSTALL: Formerly "BOF FOCP Installation (8740K)(Node Room Install)."

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls

Other Cost Elements -

ENGINEERING, TEST & CERTIFICATION: Increased estimate due to additional technical information discovered.

MISCELLANEOUS GOVERNMENT FURNISHED EQUIPMENT (GFE): Includes Major item GFE not listed such as Hangar Division Door Upgrade ($0.990M), Lithium-Ion Battery Shop to Support JSF ($1.391M), and Weapons and Aircraft Elevators ($0.750M). There are fourteen other unlisted systems totaling $13.906M, each under $1.000M in individual requirement.

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls

Ordnance	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
P-35 Items		
AVIATION EQUIPMENT & SUPPORT	1	48.695
NATO SEASPARROW SURFACE MISSILE SYSTEM (NSSMS)	1	8.266
AN/SPS-48G - 3D AIR SEARCH RADAR	1	13.459
AN/SPS-49(V)1 OVERHAUL/REFURBISHMENT	1	8.664
AN/SPQ-14 - ADVANCED SENSOR DISTRIBUTION SYSTEM (ASDS)	1	3.641
P-35 Items Subtotal		**82.725**
Major Items		
COMBAT DIRECTION CENTER (CDC)/FLAG RIPOUT/INSTALL	1	16.524
AN/SPQ-9B - ANTI-SHIP CRUISE MISSILE DEFENSE RADAR	1	3.728
SEAT SHOP MODIFICATIONS (JSF CVN)/PILOT EQUIPMENT AND HELM	1	3.600
MK38 MOD 2 GUN SYSTEM	1	2.030
AN/SQQ-34C - CARRIER TACTICAL SUPPORT CENTER	1	1.287
RAM GUIDED MISSILE LAUNCHING SYSTEM	1	1.188
Major Items Subtotal		**28.357**
Other Cost Elements		
TEST & CERTIFICATIONS, MISC		8.212
Other Cost Elements Subtotal		**8.212**
Total Ordnance		**119.294**

Remarks:

P-35 total cost decreased from PB18 submission by $23.953M. SPQ-9B, MK38, and SQQ-34C were moved to Major items on the P-8a. Aviation Equipment & Support ($0.238M), SPS-48G ($2.900M), and SPS-49 ($0.119M) decreased by $3.257M in total and detailed on respective P-35 exhibits.

Major items increased from PB18 submission by $7.588M. SPQ-9B, MK38, and SQQ-34C systems were previously listed on P-35 exhibits.

COMBAT DIRECTION CENTER (CDC)/FLAG RIPOUT/INSTALL - Formerly "IWS CDC/Flag Partial Reconfiguration (Ripout/Install)."

AN/SPQ-9B - ANTI-SHIP CRUISE MISSILE DEFENSE RADAR: Increased by $0.982M for additional modernization to incorporate Periscope Detection Radar (PDR) capability. Without this additional modernization, the ship will be more vulnerable to surveillance and potential attack from an enemy submarine. Previously listed as a P-35 item. This modernization is not comparable to the work completed during the CVN 72 RCOH.

MK38 MOD 2 GUN SYSTEM: RCOH will install system infrastructure (cable, foundations) to facilitate install during a CIA in 2021. De-scoped GFE hardware procurement and installation to a future availability.

AN/SQQ-34C - CARRIER TACTICAL SUPPORT CENTER: RCOH will install system infrastructure (cable, foundations) to facilitate install during a CIA in 2021. De-scoped GFE hardware procurement and installation to a future availability.

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls

Other Cost Elements includes 29 unlisted systems, each under $1.000M in individual requirement.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: C4ISR	**PARM Code:** SPAWAR PMW 750

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	45.823
Ancillary Equipment		2.383
Technical Data and Documentation		0.647
Spares		1.541
System Engineering		12.824
Technical Engineering Services		30.367
Other Costs		13.848
Total	**1**	**107.433**

Description:

Comprised of 34 discreetly funded line items, provides an integrated communications infrastructure to support both tactical and non-tactical applications in all warfare and support areas, an improved shipboard RF distribution system and multiband antennas, and capabilities for the control and monitoring of RF assets introducing network automation and provide interoperable communications for joint operations. It will interconnect forces of the Battle Group (BG)/Amphibious Readiness Group (ARG) and connects the BG/ARG with expeditionary forces and the Commander-in-Chief Command Complex (CCC) ashore crossing all available media including Ultra High Frequency (UHF), Super High Frequency (SHF), Extremely High Frequency (EHF), commercial satellite links, and new medium-to-high data rate HF and UHF line of sight (LOS) links. C4ISR includes RCS, weather, navigational, signal exploitation, and command and control equipment.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	Various	Various	Various	Various	1	45.833

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	0		Various

Competition/Second Source Initiatives:

N/A

Remarks:

Overall decrease of $7.500M to meet FY17 Congressional mark. Automatic Information System (AIS) ($0.243M) and Navy Integrated Tactical Environmental System (NITES) ($0.425M) were de-scoped from the RCOH. Technical engineering services decreased ($13.797M) through system de-scopes and a detailed review of ship installation drawings and shipboard work scopes. Technical data and documentation, system engineering, and program management support costs were reduced ($3.732M) as a result of realized savings from a PMS 312 cost reduction initiative to streamline processes and leverage common efforts across multiple C4ISR systems. Distributed Common Ground Station-Naval (DCGS-N) Increment 2, Ships Signals Exploitation Equipment (SSEE) Increment F, and Communications Data Link System Tech Refresh (CDLS TR) were previously part of the MQ-25A Stingray portfolio in addition to the MQ-25A hardware. Although MQ-25A has been cancelled and removed from the work package, CVN 73 still requires different variants of these systems. Non-MQ-25A variants were added to the C4ISR portfolio: DCGS-N Increment 1 ($2.114M), CDLS Refurbishment ($1.921M), and SSEE SFF ($6.040M). Additional $0.622M increase of hardware results from minor changes across 31 other systems in the portfolio.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: INTEGRATED COMMUNICATION NETWORK (ICAN / DDCN & IVCN)	**PARM Code:** NAVSEA 05H3, NAVSEA 05Z33

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	24.495
Ancillary Equipment		0.015
Technical Data and Documentation		1.347
Spares		0.556
System Engineering		9.555
Technical Engineering Services		13.789
Other Costs		7.049
Total	**1**	**56.806**

Description:

Comprised of 25 discreetly funded line items, the Integrated Communication Network consists of the following systems: An Integrated Communications System (ICS) that provides the ship's Internal Command and Control Communications. In addition, ICS provides connectivity to other onboard systems such as Announcing Systems, Sound Powered Circuits, Secure / Non Secure off-ship Communications, Shipboard Air Traffic Control Communications (SATCC) and Hierarchical Yet Dynamically Reprogrammable Architecture (HYDRA). The Machinery Control Monitoring System (MCMS) controls and monitors approximately 3500 machinery signals for various HM&E auxiliary systems (e.g. JP5, firemen, IC/SM panels) for aircraft carriers. It utilizes the Machinery Control Network for signals. The Machinery Control Network (MCN) is the core network that provides communication services and transport for the MCMS system and part of the backbone that rides over the Fiber Optic Cable Plant (FOCP). It consists of five network switches, associated racks, and cabling. The Navigation Critical Distribution System (NAVCRIT) is a switched network providing communication services and transport for the NAV Standard Message, which is originated in the NAVSSI (Naval Sensor System Interface) system. The NAVCRIT Distribution consists of three backbone switches and eight I/0 controllers to convert digital NAV data for analog outputs. It will use the FOCP to the maximum extent for connectivity. The Ship Control System (SCS) provides control and display of rudder position, Engine and Propeller Order Telegraph functions. SCS provides data for heading, speed, and rudder angles through NAVCRIT Network from NAVSSI. The SCS interfaces to an Electronic Chart Display Information System.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	Various	Various	Various	Various	1	24.495

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	0		Various

Competition/Second Source Initiatives:

N/A

Remarks:

The following system upgrades were cancelled or scaled back to meet $5.000M of FY17 Congressional budget marks: Advance Damage Control System ($0.527), 46MC Aviation Weapons Handling/ Movement Announcing System ($2.367M), Digital Microphone Control Station ($0.947M), 12CK Secure Phone System ($0.904M), and the Machinery Control System (MCS) Modernization ($0.255M). System refurbishments are planned to extend their service life. 12CK will need to be installed post-RCOH in another availability. Net increase of hardware primarily results from significant cost increases to Navigation Critical Distribution System ($0.790M) and Television Direct-to-Sailor (TV-DTS) Antenna ($0.490M). Minor hardware changes across 23 other systems in the portfolio resulted in $0.196M decrease.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: SHIP SELF DEFENSE SYSTEM (SSDS) MK2 MOD 1E	**PARM Code:** NAVSEA PEO IWS 10

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	10.969
Technical Data and Documentation		0.975
Spares		0.845
System Engineering		7.719
Technical Engineering Services		4.395
Other Costs		18.563
Total	**1**	**43.466**

Description:

The Ship Self Defense System (SSDS) MK2 provides primary support for force/own ship combat systems control and enhanced self-defense capabilities. SSDS is the heart of the Combat System integrating sensors, weapons systems, data links, and command and control elements into a unified Combat System.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	Raytheon/Lockheed Martin	C/CPFF	Jul 2017	Option	1	10.969

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	27	24	Jan 2017

Competition/Second Source Initiatives:

N/A

Remarks:

The PARM streamlined processes, leveraged common efforts across multiple platforms, and provided the same services and products at a reduced cost to achieve savings in major hardware, technical data and documentation, spares, and system engineering. Funding includes procurement of system upgrades that address obsolescence as well as increased operability effectiveness.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: ELECTRONIC CONSOLIDATED AUTOMATED SUPPORT SYSTEM (ECASS)	**PARM Code:** NAVAIR PMA 260

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	35.000
Technical Engineering Services		1.225
Other Costs		0.400
Total	**1**	**36.625**

Description:

The Electronic Consolidated Automated Support System (eCASS) provides repair capability for aircraft instruments, components ("black boxes"), subcomponents (e.g. circuit cards), avionics and missile systems for all current deployable aircraft, F/A-18 ATFLIR (Forward Looking Infrared Receiver) and ALQ-99 (electronic jamming) systems, as well as new and future aircraft such as E-2D and F-35C. The eCASS replaces the obsolete Consolidated Automated Support System (CASS) that formerly provided this support. The eCASS suite provides expeditious, on-site repair capability for more than 1,100 different components, without which parts support for the ship's AIRWING (which routinely operates at great distances from logistics supply points) would be degraded to the point that it would result in increased support costs and negatively affect mission accomplishment, combat readiness, and required sortie generation rates.

The SCDs for this effort take six months to install and need to be completed during this RCOH. Implementing these SCDs in the Forward Deployed Naval Forces (FDNF) Japan availability periods would increase costs and lengthen the period for install due to the need to complete the work over multiple short availability periods and the alternating of FWD/AFT opportunities. Additionally, if eCASS is delayed, it will drive higher AVCAL support cost due to minimal or no repairs for supporting the deployed AIRWING mission responsible for supporting National Interest worldwide.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	TBD	TBD	TBD	New	1	35.000

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	31	12	Sep 2018

Competition/Second Source Initiatives:

N/A

Remarks:

Contract data is "TBD" due to ongoing solicitation for second full rate production contract actions.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: AN/SPN-46 OVERHAUL/UPGRADE	**PARM Code:** NAVAIR PMA 213

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	6.661
System Engineering		0.599
Technical Engineering Services		3.360
Other Costs		2.237
Total	**1**	**12.857**

Description:

The AN/SPN-46 Automatic Carrier Landing System (ACLS) is a precision approach landing system (PALS) which provides electronic guidance to carrier-based aircraft and allows them to land in all-weather conditions with no limitations due to low ceiling or restricted visibility. AN/SPN-46 is a fully automated, all-weather approach landing aid for carrier aircraft that enhances safety of flight during recovery, enables the execution of all-weather air combat operations, and is required to achieve full air traffic control certification following RCOH. SPN-46 is required to be removed during the RCOH to prevent damage and allow for major infrastructure recapitalization and reconfiguration of the ship's island, mast, and tower.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	NAWC Aircraft Division	WR	Jan 2015		1	6.661

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	26	24	Aug 2017

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: AN/USG-2B - COOPERATIVE ENGAGEMENT CAPABILITY (CEC)	**PARM Code:** NAVSEA PEO IWS 6.0

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	3.448
Spares		0.357
System Engineering		1.675
Technical Engineering Services		1.910
Other Costs		4.202
Total	**1**	**11.592**

Description:

Cooperative Engagement Capability (CEC) - AN/USG-2B provides Battle Force Anti-Air Warfare (AAW) capability by coordinating all force AAW sensors into a single real time, fire control quality composite track picture. CEC distributes sensor measurement data from each Cooperating Unit (CU) to all other CUs. Each CU has a Data Distribution System (DDS) and a Cooperative Engagement Processor (CEP). The DDS encodes and distributes ownship sensor and engagement data to other CUs, and receives and decodes other CU's data. The CEP processes ownship data and DDS supplied remote sensor and weapon data needed to provide the common air picture.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	Raytheon/Sechan	C/FFP	Jan 2016	Option	1	3.448

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	30	18	Apr 2017

Competition/Second Source Initiatives:

N/A

Remarks:

Funding includes procurement of system upgrades that address obsolescence as well as increased operability effectiveness. Major hardware cost revised from estimate to actual, which was a $1.525M reduction from PB18. Some cost savings ($0.995M) were redirected to support increases to system engineering efforts related to Fire Control Loop Improvement Program (FCLIP) Phase II. FCLIP is a multi-system (SSDS, CEC, NSSMS, RAM, SLQ-32) that will significantly improve and enhance the ability of the ship to defend against incoming missile threats. The CEC FCLIP solution will utilize less hardware but require additional engineering effort and software changes to implement. INCO spares was reduced by $0.119M.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: JOINT PRECISION APPROACH AND LANDING SYSTEM (JPALS)	**PARM Code:** NAVAIR PMA 213

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	5.497
Ancillary Equipment		0.026
Spares		0.890
System Engineering		0.204
Technical Engineering Services		1.351
Other Costs		1.123
Total	**1**	**9.091**

Description:

The Joint Precision Approach and Landing System (JPALS) is the future precision approach and landing system which will be the primary landing system for the Joint Strike Fighter (F-35B/F-35C), Unmanned Carrier Aviation Air System (MQ-25A), and future aircraft platforms onboard CVNs and LHA/LHD type ships. JPALS is the Navy certified sea-based system to have the capabilities necessary to provide ship range/bearing for JPALS-equipped aircraft operating within 200NM; provide air traffic control surveillance of JPALS-equipped aircraft via secure, two-way data link with the ship; and support auto-land functionality for the F-35C, MQ-25A, and future platforms to CVNs. JPALS is critical for MQ-25A as currently no secondary landing system exists for MQ-25A operations at sea.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	NAWC Aircraft Division		Mar 2019	New	1	5.497

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	6	15	Mar 2019

Competition/Second Source Initiatives:

N/A

Remarks:

Overall decrease is a result of realized savings from a PMS 312 cost reduction initiative to reduce program management, system engineering, and logistics support. Hardware increase of $0.921M is updated based upon actual contract price with equipment vendor. Install Spares decrease based upon a government controlled AIT install. AITs utilize fewer INCO spares than the shipbuilder due to familiarity with the equipment. Technical engineering services increase based upon an updated AIT scope review.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: AN/USQ-T (SERIES) - BATTLE FORCE TACTICAL TRAINER (BFTT)	**PARM Code:** NAVSEA PEO IWS 1IT

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	0.286
Technical Data and Documentation		0.180
Spares		0.011
System Engineering		0.999
Technical Engineering Services		2.137
Other Costs		4.040
Total	**1**	**7.653**

Description:

Battle Force Tactical Training (BFTT) system provides training scenarios sent to multiple ships, operating as a simulated coordinated battle group in port or underway. The participating ships will operate their respective shipboard equipment configured as close to normal tactical configuration as possible, inclusive of capabilities and limitations, thereby emulating actual operations.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	Various	C/FFP	Jan 2017	New	1	0.286

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	28	24	Dec 2016

Competition/Second Source Initiatives:

N/A

Remarks:

Funding includes procurement of system upgrades that address obsolescence as well as increased operability effectiveness by integrating training functions into SSDS consoles.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: AN/SLQ-59 - ELECTRONIC WARFARE (EW) SYSTEM	**PARM Code:** NAVSEA PEO IWS 2E

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	1.500
Ancillary Equipment		0.100
Spares		0.045
System Engineering		0.319
Technical Engineering Services		3.890
Other Costs		0.450
Total	**1**	**6.304**

Description:

AN/SLQ-59 is a CNO designated program in response to PACFLT/CJTF519 Urgent Operational Needs Statement (UONS) designed to enhance existing shipboard Surface Electronic Warfare Systems. AN/SLQ-59 provides enhanced shipboard Electronic Support (ES) and Electronic Attack (EA) capabilities.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	Electro Impulse Laboratory, Inc	SS/IDIQ	Nov 2018	Option	1	1.500

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	18	12	Feb 2019

Competition/Second Source Initiatives:

N/A

Remarks:

Added requirement. SLQ-59 is a CNO designated program being installed in response to PACFLT/CJTF519 Urgent Operations Needs Statement (UONS). System is required to combat/detour emerging missile threats. SLQ-59 is a significant electronic warfare enhancement that improves the ability of the ship to defend against a wide range of missile threats.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: AN/SPN-41 REFURBISHMENT	**PARM Code:** NAVAIR PMA 213

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	3.577
System Engineering		0.393
Technical Engineering Services		1.570
Other Costs		0.211
Total	**1**	**5.751**

Description:

The AN/SPN-41B Aircraft Approach Control Transmitting Set provides all-weather instrument approach guidance from the ship to the aircraft. It is used as the ship's Instrument Landing System (ILS) and Monitor to provide azimuth and elevation alignment information to landing aircraft on final approach to the deck. It also serves as an independent monitor of other shipboard landing systems for the pilot as well as providing a backup landing guidance option. SPN-41 enhances safety of flight during recovery, enables the execution of all-weather air combat operations, and is required to achieve full air traffic control certification following RCOH. SPN-41 is required to be removed during the RCOH to prevent damage and allow for major infrastructure recapitalization and reconfiguration of the ship's island, mast, and tower.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	NAWC Aircraft Division	WR	Jan 2015		1	3.577

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	21	24	Jul 2017

Competition/Second Source Initiatives:

N/A

Remarks:

Technical engineering services cost increase of $0.315M. Revised estimate based on most recent detailed review of CVN 73 RCOH drawings.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: AIRCRAFT ELECTRICAL SERVICE STATION (AESS) INSTALL	**PARM Code:** NSWC Philadelphia

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	6.891
System Engineering		0.238
Technical Engineering Services		7.035
Other Costs		0.288
Total	**1**	**14.452**

Description:

AESS supports the F-35 Joint Strike Fighter (JSF) and JUCAS electrical requirements. They require 270VDC electrical power for maintenance and pre-flight operations. This type of power is not currently available on CVN-68 class aircraft carriers. This ship alteration will equip CVN-68 class ships with a dual purpose AESS station providing either: 90KVA of 115VAC, 400Hz, power for the Advanced Hawkeye (E-2D), and all legacy aircraft, or 70KW of 270VDC electrical power for the JSF (F-35) and JUCAS. This upgrade will replace the obsolete components now part of the AESS with a quiet, lightweight, low-cost, dual-purpose system that decreases maintenance costs and improves habitability.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	Various	C/FFP	Jan 2017	New	1	6.891

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	47	12	May 2016

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: FURNITURE (NON PROPULSION PLANT)	**PARM Code:** NSWC Philadelphia

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	4.650
System Engineering		0.641
Technical Engineering Services		5.981
Other Costs		0.002
Total	**1**	**11.274**

Description:

Shipboard furniture procurement and installation in non-propulsion spaces. Replaces damaged/worn furniture for 250 non-propulsion spaces. During the RCOH, all furniture is offloaded and evaluated for reuse. Most furniture is stored and reinstalled. However, damaged furniture must be replaced.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	Tecnico	C/CPFF	Dec 2016	New	1	4.650

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	35	6	Nov 2017

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: LOW PRESSURE AIR PLANT (LPAP)	**PARM Code:** NSWC Philadelphia

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	6.094
System Engineering		0.071
Technical Engineering Services		0.085
Other Costs		0.113
Total	**1**	**6.363**

Description:

Remove three Ship Service Air Compressors (SSAC), four Control Air Compressors, and associated dryers from two machinery rooms and two reactor rooms. Install nine MARC 350 Low Pressure Air Plants (LPAPs) to serve both ship service air and control air systems.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	RIX Industries	SS/IDIQ	Feb 2015	Option	1	6.094

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	47	12	May 2016

Competition/Second Source Initiatives:

N/A

Remarks:

Hardware has increased due to new pricing from the sole source provider, RIX Industries. CVN 73 RIX LPAPs will contain additional equipment enhancements including an improved display console and a re-designed air end assembly. Enhancements will correct equipment failures experienced in the Fleet and reduce lifecycle cost.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: AUTOMATIC VOLTAGE REGULATOR (AVR)	**PARM Code:** NAVSEA PMS 312

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	4.340
Total	**1**	**4.340**

Description:

The Turbine Generator Automatic Voltage Regulator is a digital upgrade to the legacy voltage regulator. Its purpose is to regulate output voltage from shipboard turbine generators to meet electrical requirements for all ship systems. This upgrade is required to improve operational safety of the turbine generators and eliminate material shortages due to obsolescence of legacy voltage regulator system components.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	Northrop Grumman Power/Control Systems	C/FFP	Jun 2015	Option	1	4.340

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	27	26	Jul 2015

Competition/Second Source Initiatives:

N/A

Remarks:

Cost reduction of $0.574M. Vendor labor was determined to be unnecessary during install and testing, resulting in systems engineering savings. The current technical manual is sufficient for CVN 73 and technical data and documentation funds are removed. Spares funds reserved for potential failures during testing were not needed.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: AVIATION EQUIPMENT & SUPPORT	**PARM Code:** NAVAIR PMA 251

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	31.269
Technical Data and Documentation		0.405
Spares		0.039
System Engineering		3.792
Technical Engineering Services		7.894
Other Costs		5.296
Total	**1**	**48.695**

Description:

Provides procurement, engineering and logistics support for launch and recovery equipment (includes overhaul/replacement of catapult launch valves and arresting gear engines), ADMACS (Aviation Data Management and Control System Phase II upgrade; includes Cyber Security requirement and future aircraft ready), Moriah Wind System, ILARTS (Integrated Launch and Recovery TV Surveillance System; includes Technical Refresh Service Change to mitigate obsolescence issues), mission pods, Jet Blast Deflectors (includes Service Change to provide side panel cooling to meet JSF requirements), aviation maintenance facility, weapons compatibility, aircraft spotting, aviation servicing facilities, Landing Signal Officer Display System (LSODS; includes ADMACS interfacing and Cyber Security updates), Long Range Lineup System (LRLS), Improved Fresnel Lens Optical Landing System (IFLOLS; includes Phase IV upgrade), Manually Operated Visual Landing Aid System (MOVLAS) and Flight Deck Lighting and Marking and Lighting. All of these systems are required to be repaired, updated, overhauled as required and tested during RCOH to attain final Flight Deck Certification authorizing launch and recovery of USN aircraft.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	Various	Various	Various	Various	1	30.269

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	0		Various

Competition/Second Source Initiatives:

N/A

Remarks:

FY17 Congressional marks removed $2.100M from technical engineering services. Funding includes overhaul/refurbishment and Service Change installations to provide continued reliability and maintainability of all legacy Aircraft Launch and Recovery Equipment and related Visual Landing Aids equipment.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: NATO SEASPARROW SURFACE MISSILE SYSTEM (NSSMS)	**PARM Code:** NAVSEA PEO IWS 12

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	1.269
System Engineering		0.075
Technical Engineering Services		6.348
Other Costs		0.574
Total	**1**	**8.266**

Description:
The NATO Seasparrow Surface Missile System (NSSMS) is a medium range self defense missile system capable of defeating near/mid-term air/surface threats.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	NSWC Port Hueneme	SS/FFP	Apr 2017	New	1	5.284

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	18	30	Apr 2017

Competition/Second Source Initiatives:
N/A

Remarks:
Hardware, systems engineering, and other costs increased due to system reconditioning estimate increase, which is based upon recent material condition assessments. The CVN 73 NSSMS system has been forward deployed for 10+ years where significant periodic reconditioning has been deferred, requiring additional reconditioning during the RCOH. Technical engineering services estimate reduced based on detailed drawing review.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: AN/SPS-48G - 3D AIR SEARCH RADAR	**PARM Code:** NAVSEA PEO IWS 2RI

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	8.500
Technical Data and Documentation		0.033
Spares		0.328
System Engineering		0.824
Technical Engineering Services		1.528
Other Costs		2.246
Total	**1**	**13.459**

Description:
AN/SPS-48G (V)1 is a long range three dimensional (3D) radar used to search, detect and provide space-stabilized, three-coordinate (range, bearing, height) data to track airborne contacts.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	Harris	SS/FPIF	Sep 2016	Option	1	8.500

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	18	18	Oct 2017

Competition/Second Source Initiatives:
N/A

Remarks:
FY17 Congressional mark removed $2.800M from technical engineering services. Funding includes procurement of a Radar Obsolescence and Availability Recovery (ROAR) Upgrade Kit that addresses obsolescence and operability issues for this legacy radar plus antenna overhaul/refurbishment that affords continued reliability and maintainability.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: AN/SPS-49(V)1 OVERHAUL/REFURBISHMENT	**PARM Code:** NAVSEA PEO IWS 2RI

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	3.291
Ancillary Equipment		0.030
Spares		0.275
System Engineering		0.657
Technical Engineering Services		3.657
Other Costs		0.754
Total	**1**	**8.664**

Description:
The AN/SPS-49 Radar is a narrow beam, very long range, two dimensional air search radar. This is the primary air search radar for the ship providing early detection of airborne contacts (range, bearing, and altitude).

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	NSWC Crane	WR	Apr 2017	Option	1	3.291

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	18	30	Apr 2017

Competition/Second Source Initiatives:
N/A

Remarks:
Funding includes overhaul/refurbishment that affords continued reliability and maintainability of this legacy radar.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls
Equipment Item: AN/SPQ-14 - ADVANCED SENSOR DISTRIBUTION SYSTEM (ASDS)	**PARM Code:** NAVSEA PEO IWS 1.0

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)
Major Hardware	1	1.153
Ancillary Equipment		0.010
Spares		0.045
System Engineering		0.078
Technical Engineering Services		1.191
Other Costs		1.164
Total	**1**	**3.641**

Description:
Advanced Sensor Distribution System (ASDS) - AN/SPQ-14(V) provides the distribution of RADAR sensor data and video to RADAR displays on board the ship.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	CVN 73	Lockheed Martin/DRS Technologies	C/FFP	Oct 2016	Option	1	1.153

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	CVN 73	Aug 2021	18	18	Apr 2018

Competition/Second Source Initiatives:
N/A

Remarks:
Funding includes procurement of a SPA-25H upgrade that addresses obsolescence and operability issues for the display system.

Exhibit P-10, Advance Procurement Requirements Analysis (*page 1 - Budget Funding Justification*): PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls

First System (2019) Award Date:	First System (2019) Completion Date:	Interval Between Systems:
January 2021	January 2025	38 Months

Cost Elements	Production Leadtime (Months)	When Required* (Months)	FY 2017 ($ M)	FY 2018 ($ M)	FY 2019 ($ M)	FY 2020 ($ M)	FY 2021 ($ M)	FY 2022 ($ M)	FY 2023 ($ M)
Advance Procurement									
Plans	-	Various	17.908	18.984	24.666	25.078	19.000	24.700	33.000
Basic	-	Various	173.837	32.941	335.180	415.784	153.379	367.587	522.535
Other	-	Various	-	9.486	4.896	19.138	8.000	11.800	24.800
Propulsion Equipment	-	Various	41.200	11.700	4.590	22.060	45.500	16.600	20.900
HM&E	-	Various	-	0.173	15.250	15.715	-	4.600	47.900
Electronics	-	Various	0.204	2.364	57.399	89.126	7.700	92.000	99.100
Ordnance	-	Various	-	0.249	7.616	21.062	1.100	21.700	21.600
Total: Advance Procurement			*233.149*	*75.897*	*449.597*	*607.963*	*234.679*	*538.987*	*769.835*
Total Advance Procurement/Obligation Authority			**233.149**	**75.897**	**449.597**	**607.963**	**234.679**	**538.987**	**769.835**

*Note: "When Required" is the number of months required before ship delivery.

Exhibit P-10, Advance Procurement Requirements Analysis (*page 2 - Budget Funding Justification*): PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls

Cost Elements	FY 2019						
	Production Leadtime *(Months)*	When Required* *(Months)*	Unit Cost *($ M)*	Contract Forecast Date	2019 Qty *(Each)*	For FY	Total Cost Request *($ M)*
Advance Procurement							
Plans	-	Various	-	Dec 2018	-	2021	24.666
Basic	-	Various	-	Jan 2019	-	2021	335.180
Other	-	Various	-	Jan 2019	-	2021	4.896
Propulsion Equipment	-	Various	-	Nov 2018	-	2021	4.590
HM&E	-	Various	-	Jan 2019	-	2021	15.250
Electronics	-	Various	-	Jan 2019	-	2021	57.399
Ordnance	-	Various	-	Jan 2019	-	2021	7.616
Total: Advance Procurement							*449.597*
Total Advance Procurement/Obligation Authority							**449.597**

Description:
FY 2019 is the fourth of five years of advance procurement for CVN 74 RCOH. Full funding begins in FY 2021 with one year of subsequent full funding in FY 2022. President's Budget (PB18) requirement was reduced from $449.5M to $75.9M with a FY 2017 to FY 2018 carryover of $150M. The CVN 74 RCOH start date shifted ten months from March 2020 to January 2021 to minimize the overlap between CVN 73 and 74 RCOHs and to align with the fleet operational schedule. FY 2019 resumes the required advance procurement funding profile to support a January 2021 start date.

CVN 74 RCOH: FY 2019 funding is required to develop and procure long-lead engineering products and nuclear material for execution contract award. Efforts will include work package planning, shipchecks, drawing development, and government furnished equipment (GFE) engineering and hardware procurements. The Advance Planning contract with the prime contractor is funded under Basic. Specific FY 2019 advance procurement requirements are as follows:

Plans: Increase of $2.7M in FY19 from PB18 submission is a result of using updated estimates fully reflecting the impact of shift in RCOH start date for planning engineering support and government furnished information (GFI) development. Funding efforts include advance planning engineering support; authorized work package (AWP) development; shipchecks and shipcheck oversight; government furnished information (GFI) development; and technical oversight and authority.

Basic: Increase of $5.1M in FY19 from PB18 submission is a result of using updated estimates fully reflecting the impact of shift in RCOH start date for procurement of long-lead material and fabrication of temporary support systems for nuclear component replacement. Funding efforts include prime contractor advance planning; integration of the AWP into the execution integrated master schedule; Ship's Force work package material procurement; and technical support.

Other: Decrease of $5.5M in FY19 from PB18 submission is a result of using updated estimates fully reflecting the impact of shift in RCOH start date Carriers Integrated Digital Environment; Carrier Team One; and essential program management. Funding efforts include risk management program; logistics planning; aircraft carrier RCOH maintenance cost reduction initiatives; Carriers Integrated Digital Environment; Carrier Team One; and essential program management.

Propulsion Equipment: Decrease of $10.8M in FY19 from PB18 submission is a result of using updated estimates fully reflecting the impact of shift in RCOH start date for nuclear component procurements and technical engineering services.

HM&E: Increase of $11.2M in FY19 from PB18 submission is a result of using updated estimates fully reflecting the impact of shift in RCOH start date for GFI/GFE long-lead procurement and technical support services. Significant funding efforts include Low Pressure Air Producer (LPAP) and VSA O2 Generator.

Exhibit P-10, Advance Procurement Requirements Analysis (*page 2 - Budget Funding Justification*): PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2086 / CVN Refueling Overhauls

Electronics: Decrease of $13.6M in FY19 from PB18 submission is a result of using updated estimates fully reflecting the impact of shift in RCOH start date for GFI/GFE long-lead procurement and technical support services for combat systems, interior communications, and C4I. Significant funding efforts include Integrated Voice Communications Network (IVCN/IVN), Digital Modular Radio (DMR), Machinery Control Systems (MCS), Ship Self Defense System (SSDS) MK 2, and Cooperative Engagement Capability (CEC).

Ordnance: Increase of $0.6M in FY19 from PB18 submission is a result of using updated estimates fully reflecting the impact of shift in RCOH start date for GFI/GFE long-lead procurement and technical support services. Efforts include GFI/GFE long-lead procurement and technical support services for radars and weapons systems. Significant funding efforts include recovery (Arresting Gear and ARC Overhaul) equipment and MK 53 Decoy Launching System (DLS).

*Note: "When Required" is the number of months required before ship delivery.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships	**P-1 Line Item Number / Title:** 2119 / DDG 1000
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	3	-	-	-	-	-	-	-	-	-	-	3
Gross/Weapon System Cost *($ in Millions)*	13,032.225	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	13,032.225
Less PY Advance Procurement *($ in Millions)*	1,160.116	-	-	-	-	-	-	-	-	-	-	1,160.116
Less Subsequent Year Full Funding *($ in Millions)*	7,780.244	-	-	-	-	-	-	-	-	-	-	7,780.244
Net Procurement (P-1) *($ in Millions)*	4,091.865	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	4,091.865
Plus Subsequent Year Full Funding *($ in Millions)*	6,975.339	271.756	223.968	270.965	-	270.965	38.216	-	-	-	-	7,780.244
Full Funding TOA *($ in Millions)*	11,067.204	271.756	223.968	270.965	-	270.965	38.216	-	-	-	-	11,872.109
Plus CY Advance Procurement *($ in Millions)*	1,160.116	-	-	-	-	-	-	-	-	-	-	1,160.116
Total Obligation Authority *($ in Millions)*	**12,227.320**	**271.756**	**223.968**	**270.965**	**0.000**	**270.965**	**38.216**	**0.000**	**0.000**	**0.000**	**-**	**13,032.225**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	168.538	38.059	43.526	77.103	-	77.103	35.506	38.520	32.802	38.691	97.316	570.061
Total *($ in Millions)*	**12,395.858**	**309.815**	**267.494**	**348.068**	**-**	**348.068**	**73.722**	**38.520**	**32.802**	**38.691**	**97.316**	**13,602.286**
Gross/Weapon System Unit Cost *($ in Millions)*	4,344.075	-	-	-	-	-	-	-	-	-	-	4,344.075

Description:

DDG 1000, a multi-mission surface combatant will serve as a versatile asset in the context of future Naval Strategy. Armed with an array of weapons, DDG 1000 will provide the Joint Force Commander with precision strike and volume fires. Designed with sustainable payload, multi-spectral stealth and optimal manning, DDG 1000 will take the fight to the enemy with unprecedented striking power, sustainability, survivability and information dominance. FY19 funding will support continued construction on DDG 1001/1002, Class Services, and GFE / Mission Systems Equipment (MSE) procurement/activation and fund Interim Spares.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships	**P-1 Line Item Number / Title:** 2119 / DDG 1000
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A
Other Related Program Elements: N/A	
Line Item MDAP/MAIS Code: N/A	

Characteristics:

	DDG
Length Overall	610 ft
Beam	80.7 ft
Displacement	15,742 TONS
Draft	27.6 ft

Systems:

Electronics
-EXTERIOR COMMUNICATIONS (EXCOMMS)
-MULTI FUNCTION RADAR (MFR)
-TOTAL SHIP COMPUTING ENVIRONMENT (TSCE)

Hull, Mechanical, and Electrical (HM&E)
-MAIN TURBINE GENERATOR (MTG)

Ordnance
-ADVANCED GUN SYSTEM (AGS)
-CLOSE-IN GUN SYSTEM (CIGS)

Production Status:

	DDG 1000 (1)	DDG 1001 (2)	DDG 1002 (3)
Contract Award Date	Feb 2008	Sep 2011	Sep 2011
Months to Completion			
a) Award to Delivery	130 months	108 months	132 months
b) Construction Start to Delivery	118 months	126 months	125 months
Delivery Date	Dec 2018	Sep 2020	Sep 2022
Completion Of Fitting Out	Jun 2019	Oct 2020	Oct 2022
Obligation Work Limit Date	May 2020	Sep 2021	Sep 2023

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	N/A	N/A		
Issue Date for TLS	N/A	N/A		
Preliminary Design	N/A	N/A		
Contract Design	N/A	N/A		
Detail Design	N/A	N/A		
Request for Proposals	Jan 2006	Apr 2006		
Design Agent	Northrop Grumman Ship Systems			

Classification of Cost Estimate: CLASS C BUDGET ESTIMATE

Footnotes:

(1) DDG 1000 HM&E delivery from the shipbuilder was May 2016. Final Delivery is December 2018

(2) DDG 1001 was re-awarded to BIW in September 2011. DDG 1001 HM&E contractual delivery from the shipbuilder is March 2018. Final Delivery is September 2020.

(3) DDG 1002 HM&E contractual delivery from the shipbuilder is March 2020. Final Delivery is September 2022

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000

Cost Categories (†) indicates the presence of a P-8a	FY 2007		FY 2009	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Plan Costs	2	1,549.338	1	559.938
Basic Construction/Conversion		3,623.125		1,232.870
Change Orders		283.530		63.708
Electronics (†)		2,666.293		1,458.988
Hull, Mechanical, and Electrical (HM&E) (†)		244.466		69.334
Ordnance (†)		525.693		265.057
Other Cost		349.869		140.016
Total Ship Estimate		**9,242.314**		**3,789.911**
Less Advance Procurement FY 2005		304.046		-
Less Advance Procurement FY 2006		706.240		-
Less Advance Procurement FY 2008		-		149.830
Less Subsequent Full Funding FY 2008		3,009.929		-
Less Subsequent Full Funding FY 2010		313.025		1,065.507
Less Subsequent Full Funding FY 2011		107.027		140.055
Less Subsequent Full Funding FY 2012		435.932		72.795
Less Subsequent Full Funding FY 2013		536.145		138.378
Less Subsequent Full Funding FY 2014		236.315		25.978
Less Subsequent Full Funding FY 2015		374.729		86.120
Less Subsequent Full Funding FY 2016		262.988		170.416
Less Subsequent Full Funding FY 2017		166.910		104.846
Less Subsequent Full Funding FY 2018		89.151		134.817
Less Subsequent Full Funding FY 2019		106.309		164.656
Less Subsequent Full Funding FY 2020		6.000		32.216
Net P-1 Funding		**2,587.568**		**1,504.297**

Remarks:
Added additional FY 19 funding ($12.000 million) and FY 20 funding ($12.000 million) to DDG 1000, 1001, and 1002 for BIW level of effort tasking for engineering services and class crew familiarization.
Additional DDG 1001 funding of ($36.700 million) in Basic Construction finances the Government's pending contractual obligation on the share line pursuant to completing construction of DDG 1001.

Additional DDG 1002 funding of ($7.400) million in Basic Construction finances the Government's pending contractual obligation on the share line pursuant to completing construction of DDG 1002.

Exhibit P-27, Ship Production Schedule: PB 2019 Navy					**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1			**P-1 Line Item Number / Title:** 2119 / DDG 1000		
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
DDG 1000 (1)	BIW	2007	Feb 2008	Feb 2009	Dec 2018
DDG 1001 (2)	BIW	2007	Sep 2011	Mar 2010	Sep 2020
DDG 1002 (3)	BIW	2009	Sep 2011	Apr 2012	Sep 2022

Footnotes:

(1) DDG 1000 HM&E delivery from the shipbuilder was May 2016. Final Delivery is December 2018

(2) DDG 1001 was re-awarded to BIW in September 2011. DDG 1001 HM&E contractual delivery from the shipbuilder is March 2018. Final Delivery is September 2020.

(3) DDG 1002 HM&E contractual delivery from the shipbuilder is March 2020. Final Delivery is September 2022

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000

Electronics	FY 2007 Qty (Each)	FY 2007 Total Cost ($ M)	FY 2009 Qty (Each)	FY 2009 Total Cost ($ M)
P-35 Items				
EXTERIOR COMMUNICATIONS (EXCOMMS)	2	470.348	1	79.962
INTEGRATED UNDERSEA WARFARE (IUSW) SYSTEM	2	216.263	1	105.136
MULTI FUNCTION RADAR (MFR)	2	519.609	1	297.999
COMMON ARRAY POWER SYSTEM (CAPS)	2	97.017	1	16.409
TOTAL SHIP COMPUTING ENVIRONMENT (TSCE)	2	374.577	1	279.991
ELECTRO-OPTICAL / INFRARED (EO/IR)	2	94.411	1	31.452
IDENTIFICATION FRIEND OR FOE (IFF)	2	35.532	1	28.138
COMMON ARRAY COOLING SYSTEM (CACS)	2	20.065	1	0.965
SHIP CONTROL SYSTEM (SCS)	2	111.527	1	117.229
COOPERATIVE ENGAGEMENT CAPABILITY (CEC)	2	16.025	1	7.800
SURFACE ELECTRONIC WARFARE IMPROVEMENT PROGRAM (SEWIP)	2	40.242	1	17.682
VERTICAL LAUNCHING SYSTEM (VLS) MK 57 4-CELL MODULES	40	276.782	20	302.815
P-35 Items Subtotal		**2,272.398**		**1,285.578**
Other Cost Elements				
MISSION SYSTEM ENGR INTEGR & TEST (MSEIT)		322.274		132.510
MISSION SYSTEM ACTIVATION		71.621		40.900
Other Cost Elements Subtotal		**393.895**		**173.410**
Total Electronics		**2,666.293**		**1,458.988**

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000

Hull, Mechanical, and Electrical (HM&E)	FY 2007		FY 2009	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
P-35 Items				
MAIN TURBINE GENERATOR (MTG)	4	78.125	2	39.412
P-35 Items Subtotal		**78.125**		**39.412**
Major Items				
BATTLE SPARES (MTG)		32.168		-
RIGID HULL INFLATABLE BOAT (RHIB)	4	2.100	2	1.100
Major Items Subtotal		**34.268**		**1.100**
Other Cost Elements				
HM&E (NGVLA, Moriah Wind Measurement System (WMS), Aviation Integration)		68.492		12.432
MISSION SYSTEM ACTIVATION		18.781		16.390
INTERIM SPARES		44.800		-
Other Cost Elements Subtotal		**132.073**		**28.822**
Total Hull, Mechanical, and Electrical (HM&E)		**244.466**		**69.334**

Remarks:

PB 19 includes additional FY 19 funding for DDG 1002 Mission System Activation ($7.000M million) and ($44.800 million) for interim spares. Interim spares and material availability support funding to bridge the gap between Fleet introduction and the time when the Naval Supply system begins to procure system stock spares based on ship class resupply demand signal.

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000

Ordnance	FY 2007		FY 2009	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
P-35 Items				
ADVANCED GUN SYSTEM (AGS)	4	468.593	2	248.762
CLOSE-IN GUN SYSTEM (CIGS)	4	36.151	2	13.795
P-35 Items Subtotal		**504.744**		**262.557**
Major Items				
BATTLE SPARES (AGS)		18.449		-
Major Items Subtotal		**18.449**		**-**
Other Cost Elements				
MISSION SYSTEM ACTIVATION		2.500		2.500
Other Cost Elements Subtotal		**2.500**		**2.500**
Total Ordnance		**525.693**		**265.057**

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000
Equipment Item: EXTERIOR COMMUNICATIONS (EXCOMMS)	**PARM Code:** PEOC4I

P-35 Category	FY 2007 Qty (Each)	FY 2007 Total Cost ($ M)	FY 2009 Qty (Each)	FY 2009 Total Cost ($ M)
Major Hardware	2	195.953	1	20.600
Technical Support Services		33.947		6.585
Other / NRE		240.448		52.777
Total	**2**	**470.348**	**1**	**79.962**

Description:

EXCOMMs are part of the DDG-1000 C3I Segment and consists of a set of seven (7) external communications elements. The EXCOMM Elements support the DDG-1000 system in achieving its mission by providing communications between DDG-1000 and other land, air, and sea based platforms as well as pier-side communications. These EXCOMM elements provide the voice, data, and video communications between DDG-1000 and the external world at sea as well as when in port. The 7 elements are: Satellite Communications (SATCOMs), Line of Sight (LOS), Common Data Link-Navy (CDL-N), Information Security (INFOSEC), Common Array Element (CAE), Cooperative Engagement Capability (CEC) and Integrated Communications Controller Software (ICCS). Government legacy systems include: Distributed Common Ground System, Navy (DCGS-N), Cooperative Engagement Capability (CEC), Communication Terminals, AN/WSC-6(V)9 Shipboard Terminal, Common Link Integrated Processor (CLIP), Automated Digital Network System (ADNS), Global Broadcast Service (GBS), Communications Data Link System (CDLS), & Naval Modular Automated Communications System (NAVMACS).

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2007	DDG 1000	Raytheon	C/CPIF	May 2008		2	97.977
FY 2009	DDG 1002	Raytheon	C/CPIF	May 2012		1	20.600

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	43	26	Mar 2013
FY 2009	DDG 1002	Sep 2022	43	26	Dec 2016

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000
Equipment Item: INTEGRATED UNDERSEA WARFARE (IUSW) SYSTEM	**PARM Code:** IWS 5.0 XR

P-35 Category	FY 2007 Qty (Each)	FY 2007 Total Cost ($ M)	FY 2009 Qty (Each)	FY 2009 Total Cost ($ M)
Major Hardware	2	95.829	1	54.300
Technical Support Services		11.293		5.639
Other / NRE		109.141		45.197
Total	**2**	**216.263**	**1**	**105.136**

Description:

The IUSW suite supports DDG-1000 in achieving Undersea and Surface Dominance with the capability to detect and track hostile surface vessels, submarines, and moored volume mines. It supports the Sensor Systems Segment in accomplishing its Integrated Air and Surface Dominance (IASD) and Integrated Undersea Dominance (IUSD) objectives by providing the capability to conduct Anti-Submarine Warfare (ASW), Torpedo Defense (TD) and Mine Warfare (MIW) missions. Military Operations Other than War (MOOTW) objectives, such as Search and Rescue (SAR) (locating downed aircraft and vessels in the ocean) are also supported. There are four major subcomponents: Bow Array Component, Towed Array Component, Towed Torpedo Countermeasures Component, as well as software.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2007	DDG 1000	Raytheon	C/CPIF	May 2008		2	47.915
FY 2009	DDG 1002	Raytheon	C/CPIF	Oct 2012		1	54.300

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	47	18	Jul 2013
FY 2009	DDG 1002	Sep 2022	46	18	May 2017

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000
Equipment Item: MULTI FUNCTION RADAR (MFR)	**PARM Code:** IWS 2.0 SQ

P-35 Category	FY 2007 Qty (Each)	FY 2007 Total Cost ($ M)	FY 2009 Qty (Each)	FY 2009 Total Cost ($ M)
Major Hardware	2	314.313	1	189.573
Technical Support Services		21.993		11.145
Other / NRE		183.303		97.281
Total	**2**	**519.609**	**1**	**297.999**

Description:

The Multi Function Radar (MFR) element supports the DDG-1000 system in achieving Integrated Air and Surface Dominance with the capability to neutralize hostile surface vessels and aircraft at short ranges. The MFR is comprised of X-Band (AN/SPY-3) arrays integrated through a common signal data processor offering surface and horizon search capabilities and 3-D air search radar capabilities. The X-Band portion also has two navigation modes (high power and lower power) for use in piloting and marine navigation.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2007	DDG 1000	Raytheon	C/CPIF	Mar 2008		2	157.157
FY 2009	DDG 1002	Raytheon	C/CPIF	Oct 2012		1	189.573

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	45	28	Nov 2012
FY 2009	DDG 1002	Sep 2022	36	28	May 2017

Competition/Second Source Initiatives:

N/A

Remarks:

Additional $35 million SCN account funds DDG 1002 AN/SPY-3(V) System Completion Non Recurring Engineering. Labor/materials to convert/refurbish Volume Search Radar (VSR) S-Band Receiver Exciter (REX) located on Self Defense Test Ship to MFR X-Band Radar Exciter for DDG1002.

VSR was removed from the DDG-1000 class per the Nunn McCurdy Certification. VSR procured for DDG-1002 will be transferred to the CVN-79.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000
Equipment Item: COMMON ARRAY POWER SYSTEM (CAPS)	**PARM Code:** IWS 2.0 SQ

P-35 Category	FY 2007 Qty (Each)	FY 2007 Total Cost ($ M)	FY 2009 Qty (Each)	FY 2009 Total Cost ($ M)
Major Hardware	2	56.185	1	12.624
Battle Spares		1.000		-
Technical Support Services		4.490		0.420
Other / NRE		35.342		3.365
Total	**2**	**97.017**	**1**	**16.409**

Description:

The Common Array Power System (CAPS) provides electrical power for the Multi Function Radar (MFR), Identification of Friend or Foe (IFF), EW/Cryptology and External Communications (EXCOMMs) Elements. The CAPS is a distributed power system designed to operate from the ship-supplied medium voltage distribution Integrated Power System's (IPS) 13.8 kV AC power source. The CAPS consists of two Power Distribution Units (PDUs) and four Power Conversion Units (PCUs).

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2007	DDG 1000	Raytheon	C/CPIF	Mar 2008		2	28.093
FY 2009	DDG 1002	Raytheon	C/CPIF	Nov 2012		1	12.624

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	48	28	Aug 2012
FY 2009	DDG 1002	Sep 2022	35	28	Jun 2017

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000
Equipment Item: TOTAL SHIP COMPUTING ENVIRONMENT (TSCE)	**PARM Code:** IWS 9.0 XV

P-35 Category	FY 2007		FY 2009	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	2	196.450	1	147.453
Technical Support Services		21.834		14.224
Other / NRE		156.293		118.314
Total	**2**	**374.577**	**1**	**279.991**

Description:

The Total Ship Computing Environment (TSCE) Segment provides all computing resources and associated software to the DDG-1000 System. It is a single computing environment for Ship, Combat and Support Systems. The TSCE provides a common middleware platform upon which all application/functional software can build and execute. The segment applications software, combined with TSCE hardware and software infrastructure represent the majority of the computing resources and associated software for the DDG-1000 System.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2007	DDG 1000	Raytheon	C/CPIF	May 2008		2	98.225
FY 2009	DDG 1002	Raytheon	C/CPIF	Oct 2012		1	147.453

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	48	21	Mar 2013
FY 2009	DDG 1002	Sep 2022	43	21	May 2017

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000
Equipment Item: ELECTRO-OPTICAL / INFRARED (EO/IR)	**PARM Code:** IWS 2.0 SJ

P-35 Category	FY 2007 Qty (Each)	FY 2007 Total Cost ($ M)	FY 2009 Qty (Each)	FY 2009 Total Cost ($ M)
Major Hardware	2	33.368	1	12.973
Technical Support Services		6.900		1.551
Other / NRE		54.143		16.928
Total	**2**	**94.411**	**1**	**31.452**

Description:

The Electro-Optical / Infrared (EO/IR) Sensor Suite Element is composed of both the hardware and software components required to detect and range on specified targets and report track data to C2. The EO/IR sensor suite consists of five (5) gimbaled EO sensors located on the cardinal faces of the deckhouse and associated electronics in Electronic Modular Enclosures (EMEs). Also included are Detect and Tracking Software components that provide embedded control and generate tracks for the C2 system and Mine Like Object (MLO) detection algorithm.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2007	DDG 1000	Raytheon	C/CPIF	May 2008		2	16.684
FY 2009	DDG 1002	Raytheon	C/CPIF	Nov 2012		1	12.973

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	47	22	Mar 2013
FY 2009	DDG 1002	Sep 2022	41	22	Jun 2017

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000
Equipment Item: IDENTIFICATION FRIEND OR FOE (IFF)	**PARM Code:** NAVAIR

P-35 Category	FY 2007 Qty (Each)	FY 2007 Total Cost ($ M)	FY 2009 Qty (Each)	FY 2009 Total Cost ($ M)
Major Hardware	2	16.018	1	8.640
Technical Support Services		2.186		2.163
Other / NRE		17.328		17.335
Total	**2**	**35.532**	**1**	**28.138**

Description:

Identification Friend or Foe (IFF) sensor element supports the DDG-1000 Ship System segment in accomplishing Anti-Air Warfare (AAW) and Anti-Surface Warfare (ASUW) missions. The IFF Sensor Element is a cooperative "challenge and reply" system that assists in the rapid identification, tracking and control of friendly platforms. IFF is comprised of three hardware components to include the Interrogator component, the Transponder component and the Electronically Scanned Antenna (ESA) component, as well as software.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2007	DDG 1000	Raytheon	C/CPIF	May 2008		2	8.009
FY 2009	DDG 1002	Raytheon	C/CPIF	Dec 2012		1	8.640

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	40	29	Mar 2013
FY 2009	DDG 1002	Sep 2022	33	29	Jul 2017

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000
Equipment Item: COMMON ARRAY COOLING SYSTEM (CACS)	**PARM Code:** IWS 2.0 SQ

P-35 Category	FY 2007 Qty (Each)	FY 2007 Total Cost ($ M)	FY 2009 Qty (Each)	FY 2009 Total Cost ($ M)
Major Hardware	2	11.766	1	-
Battle Spares		1.000		-
Technical Support Services		0.824		0.107
Other / NRE		6.475		0.858
Total	**2**	**20.065**	**1**	**0.965**

Description:

The Common Array Cooling System (CACS) provides liquid cooling for the Multi Function Radar (MFR) and External Communications (EXCOMMs) arrays. CACS is a distributed cooling system consisting of three Cooling Equipment Units (CEUs). Each CEU operates an independent coolant loop used to transport, monitor and control coolant flow to the DBR and EXCOMMs Equipment. CEUs consist of redundant pumps, a heat exchanger and filtration system. It is designed to provide liquid coolant to the MFR and EXCOMM equipment and dissipate heat to the ship-supplied chilled water.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2007	DDG 1000	Raytheon	C/CPIF	May 2008		2	5.883
FY 2009	DDG 1002	Raytheon	C/CPIF	Nov 2012		1	0.000

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	49	28	Jul 2012
FY 2009	DDG 1002	Sep 2022	35	28	Jun 2017

Competition/Second Source Initiatives:

N/A

Remarks:

CACS Technical Services are incorporated into DBR Technical Services. DDG 1002 CACS costs are included in the DDG 1002 MFR value.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000
Equipment Item: SHIP CONTROL SYSTEM (SCS)	**PARM Code:** SPAWAR

P-35 Category	FY 2007 Qty (Each)	FY 2007 Total Cost ($ M)	FY 2009 Qty (Each)	FY 2009 Total Cost ($ M)
Major Hardware	2	58.000	1	42.801
Technical Support Services		6.031		8.256
Other / NRE		47.496		66.172
Total	**2**	**111.527**	**1**	**117.229**

Description:

The Flight 1 Ship Control System (SCS) element is a system of hardware and software items that provide hierarchical and integrated ship control by the DDG-1000 crew. The SCS software architecture allows for various levels of automation for monitoring, control, reporting and configuration of SCS equipment and operations to support mission and low manning concepts. From workstation positions on the ship bridge or in the ship mission centers, the SCS coordinates, controls and monitors the navigation, hull, electric plant, machinery plant and damage control functions on the DDG-1000.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2007	DDG 1000	Raytheon	C/CPIF	May 2008		2	29.000
FY 2009	DDG 1002	Raytheon	C/CPIF	May 2012		1	42.801

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	38	31	Mar 2013
FY 2009	DDG 1002	Sep 2022	38	31	Dec 2016

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000
Equipment Item: COOPERATIVE ENGAGEMENT CAPABILITY (CEC)	**PARM Code:** IWS 6.0 XN

P-35 Category	FY 2007 Qty (Each)	FY 2007 Total Cost ($ M)	FY 2009 Qty (Each)	FY 2009 Total Cost ($ M)
Major Hardware	2	12.000	1	6.800
Technical Support Services		4.025		1.000
Total	**2**	**16.025**	**1**	**7.800**

Description:

Cooperative Engagement Capability (CEC) is a sensor network with Integrated Fire Control capability that significantly improves Battle Force air and missile defense capabilities by coordinating measurement data from Battle Force air search sensors on CEC-equipped units into a single, real-time, composite cooperating unit (CU), to all other CUs in the Battle Force through a real-time, line of sight, high data rate sensor and engagement data distribution network. CEC is highly resistant to jamming and provides accurate grid locking (relative spatial positioning) between CUs. Each CU independently employs high capacity, parallel processing and advanced algorithms to combine all distributed sensor data into a high quality track picture which is the same for all CUs. CEC data is presented as a superset of the best air and missile defense sensor capabilities from each CU, all of which are integrated into a single input to each CU's combat weapon system. CEC significantly improves Battle Force defense in depth, including both local and area defense capabilities against current and future air missile threats.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2007	DDG 1000	Raytheon	C/FPIF	Feb 2007		2	6.000
FY 2009	DDG 1002	Raytheon	C/FPIF	Oct 2013		1	6.800

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	34	18	Aug 2014
FY 2009	DDG 1002	Sep 2022	34	18	May 2018

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000
Equipment Item: SURFACE ELECTRONIC WARFARE IMPROVEMENT PROGRAM (SEWIP)	**PARM Code:** IWS 2.0 SJ

P-35 Category	FY 2007 Qty (Each)	FY 2007 Total Cost ($ M)	FY 2009 Qty (Each)	FY 2009 Total Cost ($ M)
Major Hardware	2	36.214	1	15.906
Technical Support Services		2.406		0.935
Other / NRE		1.622		0.841
Total	**2**	**40.242**	**1**	**17.682**

Description:

SEWIP provides enhanced Electronic Warfare (EW) capabilities to improve anti-ship missile defense, counter-targeting and counter surveillance capabilities, as well as improved situational awareness to pace the threat, improving detection, accuracy, and mitigation of EMI. The SEWIP Block 2 is an upgraded antenna, receiver and combat system interface for AN/SLQ-32.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2007	DDG 1000	Lockheed Martin	C/FPIF	Jul 2012		2	18.107
FY 2009	DDG 1002	Lockheed Martin	C/FPIF	Jan 2015		1	15.906

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	2	19	Mar 2017
FY 2009	DDG 1002	Sep 2022	2	16	Mar 2021

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000

Equipment Item: VERTICAL LAUNCHING SYSTEM (VLS) MK 57 4-CELL MODULES | **PARM Code:** IWS 3L S8

P-35 Category	FY 2007		FY 2009	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	40	180.987	20	234.670
Technical Support Services		9.029		4.231
Other / NRE		86.766		63.914
Total	**40**	**276.782**	**20**	**302.815**

Description:

The MK 57 VLS is a general purpose, operationally unmanned launching system capable of stowing, preparing, and launching missiles in support of DDG-1000 mission areas including: land attack warfare, integrated air and surface dominance, and integrated undersea dominance. The MK57 VLS provides the capability for rapid launch of missiles into a 360-degree hemispherical volume above and about the ship. The canistered missiles are stowed within the launching systems below-deck cells. DDG-1000 will have 80 total cells grouped into 20 four cell modules. Flight 1 missiles to be carried include: Enhanced Sea Sparrow Missile (ESSM), Standard Missile-2 (SM-2) Blk III, Tomahawk Land Attack Missile (TLAM) Blk III/IV, and Vertical Launch Anti-Submarine Rocket (VLA).

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2007	DDG 1000	Raytheon	C/CPIF	May 2008		40	4.525
FY 2009	DDG 1002	Raytheon	C/CPIF	Oct 2012		20	11.734

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	40	24	Aug 2013
FY 2009	DDG 1002	Sep 2022	40	24	May 2017

Competition/Second Source Initiatives:

N/A

Remarks:

In December 2015, the Mission Systems Equipment for DDG 1002 contract was exercised on FY16/FY17 options including an increase of $61.8M for MK57 VLS.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000
Equipment Item: MAIN TURBINE GENERATOR (MTG)	**PARM Code:** PMS 500 WA

P-35 Category	FY 2007		FY 2009	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	4	73.262	2	39.412
Technical Support Services		1.485		-
Other / NRE		3.378		-
Total	**4**	**78.125**	**2**	**39.412**

Description:

The Main Turbine Generator Set (MTG) shall be capable of being utilized as the prime power source on the DDG-1000 Destroyer for electrical power applications (propulsion, ship services, and combat systems loads). The DDG-1000 baseline includes two MTGs. The minimum output power from each MTG shall be 35.25 MWe. The engine utilizes a Full Authority Digital Control Local Operating Panel (FADC LOCOP) and electric start system. The generator contains redundant automatic voltage regulators (AVR) with automatic changeover.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2007	DDG 1000	Rolls-Royce	C/FFP	Mar 2007	New	4	18.316
FY 2009	DDG 1002	Rolls-Royce	C/FFP	Jan 2008	Option	2	19.706

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	33	24	Mar 2014
FY 2009	DDG 1002	Sep 2022	33	24	Dec 2017

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000
Equipment Item: ADVANCED GUN SYSTEM (AGS)	**PARM Code:** IWS 3C YF

P-35 Category	FY 2007 Qty (Each)	FY 2007 Total Cost ($ M)	FY 2009 Qty (Each)	FY 2009 Total Cost ($ M)
Major Hardware	4	298.654	2	206.747
Technical Support Services		14.500		3.860
Other / NRE		155.439		38.155
Total	**4**	**468.593**	**2**	**248.762**

Description:

The Advanced Gun System is a fully automated, single barrel, 155mm, vertically loaded, stabilized gun mount that is capable of storing, initializing/programming, loading and firing projectiles and propelling charges. Its primary mission is Land Attack Warfare in support of ground and expeditionary forces beyond the Line of Sight in the DDG-1000 system's littoral engagement area where precise, rapid-response, high-volume, long-range fire support is required. Each DDG-1000 will carry two complete AGS systems - Mount 61 and 62. The above deck configurations are identical but each has a slightly different below deck configuration.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2007	DDG 1000	BAE	C/CPIF	Apr 2008		4	74.664
FY 2009	DDG 1002	BAE	C/CPIF	Apr 2012		2	103.374

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	31	39	Feb 2013
FY 2009	DDG 1002	Sep 2022	31	39	Nov 2016

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2119 / DDG 1000
Equipment Item: CLOSE-IN GUN SYSTEM (CIGS)	**PARM Code:** IWS 3C YF

P-35 Category	FY 2007 Qty (Each)	FY 2007 Total Cost ($ M)	FY 2009 Qty (Each)	FY 2009 Total Cost ($ M)
Major Hardware	4	16.034	2	7.534
Technical Support Services		7.177		3.381
Other / NRE		12.940		2.880
Total	**4**	**36.151**	**2**	**13.795**

Description:

The Close-In Gun System (CIGS) supports the DDG-1000 system in achieving Integrated Air and Surface Dominance with the capability to neutralize hostile surface vessels and aircraft at short ranges. CIGS also supports the Military Operations Other than War (MOOTW) missions, such as performing maritime interdiction, conducting maritime law enforcement, and supporting hostage rescue. Two (2) CIGS will be mounted on the aft end of the hanger. The CIGS MK 46 MOD 2 GWS is composed of a turret assembly that houses the MK 44 MOD 2 cannon and an advanced Fire Control System that includes a ballistic solution computer, an electro-optical sensor package, and an eye-safe laser range finder. The system uses a forward-looking infrared sensor, a low-light television camera, and eye safe laser range finder with a closed-loop tracking system to optimize accuracy against small, high-speed surface targets. The system can be operated locally from the gun control station inside the turret, remotely from the MK 46 MOD 2 GWS Remote Gun Station Operator (RGSO) panel in the Combat Information Center (CIC), or manually using hand cranks from inside the turret. The 30mm cannon, MK 44 MOD 2, is a single barrel, open bolt, dual feed, electrically powered, chain-driven automatic cannon. The system has a magazine capacity of 424 rounds, a dual-feed capability with a firing rate of 200 rounds per minute, and is capable of selectively switching between ammunition types and firing modes.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2007	DDG 1000	General Dynamics Land Systems	C/FFP	Jan 2015		4	4.008
FY 2009	DDG 1002	General Dynamics Land Systems	C/FFP	Mar 2016		2	3.767

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2007	DDG 1000	Dec 2018	6	22	Aug 2016
FY 2009	DDG 1002	Sep 2022	6	18	Sep 2020

Competition/Second Source Initiatives:

N/A

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships	**P-1 Line Item Number / Title:** 2122 / DDG-51
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A
Other Related Program Elements: N/A	
Line Item MDAP/MAIS Code: N/A	

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	75	2	2	3	-	3	2	3	3	3	2	95
Gross/Weapon System Cost *($ in Millions)*	77,585.695	3,364.381	3,499.079	5,292.689	0.000	5,292.689	3,554.589	5,479.083	5,529.423	5,326.153	3,803.000	113,434.092
Less PY Advance Procurement *($ in Millions)*	2,911.519	-	-	-	-	-	-	-	-	-	-	2,911.519
Less Cost To Complete *($ in Millions)*	1,217.162	-	-	-	-	-	-	-	-	-	-	1,217.162
Less Subsequent Year Full Funding *($ in Millions)*	433.000	-	-	-	-	-	-	-	-	-	-	433.000
Less Hurricane *($ in Millions)*	227.100	-	-	-	-	-	-	-	-	-	-	227.100
Less EOQ *($ in Millions)*	238.995	182.589	-	39.362	-	39.362	113.660	332.635	332.635	-	-	1,239.876
Less Escalation *($ in Millions)*	48.200	-	-	-	-	-	-	-	-	-	-	48.200
Less Transfer *($ in Millions)*	218.500	-	-	-	-	-	-	-	-	-	-	218.500
Net Procurement (P-1) *($ in Millions)*	72,291.219	3,181.792	3,499.079	5,253.327	0.000	5,253.327	3,440.929	5,146.448	5,196.788	5,326.153	3,803.000	107,138.735
Plus Subsequent Year Full Funding *($ in Millions)*	-	433.000	-	-	-	-	-	-	-	-	-	433.000
Full Funding TOA *($ in Millions)*	72,291.219	3,614.792	3,499.079	5,253.327	-	5,253.327	3,440.929	5,146.448	5,196.788	5,326.153	3,803.000	107,571.735
Plus CY Advance Procurement *($ in Millions)*	3,333.103	-	-	-	-	-	-	-	-	-	-	3,333.103
Plus Cost To Complete *($ in Millions)*	1,034.849	15.959	51.377	53.966	-	53.966	61.011	-	-	-	-	1,217.162
Plus EOQ *($ in Millions)*	-	-	90.336	391.928	-	391.928	336.028	-	-	-	-	818.292
Plus Escalation *($ in Millions)*	48.200	-	-	-	-	-	-	-	-	-	-	48.200
Plus Transfer *($ in Millions)*	218.500	-	-	-	-	-	-	-	-	-	-	218.500
Plus Hurricane *($ in Millions)*	227.100	-	-	-	-	-	-	-	-	-	-	227.100
Total Obligation Authority *($ in Millions)*	**77,152.971**	**3,630.751**	**3,640.792**	**5,699.221**	**0.000**	**5,699.221**	**3,837.968**	**5,146.448**	**5,196.788**	**5,326.153**	**3,803.000**	**113,434.092**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	2,255.510	114.092	84.797	73.025	-	73.025	163.555	103.058	115.498	114.818	-	3,024.353
Total *($ in Millions)*	**79,408.481**	**3,744.843**	**3,725.589**	**5,772.246**	**-**	**5,772.246**	**4,001.523**	**5,249.506**	**5,312.286**	**5,440.971**	**3,803.000**	**116,458.445**
Gross/Weapon System Unit Cost *($ in Millions)*	1,034.476	1,682.191	1,749.540	1,764.230	-	1,764.230	1,777.295	1,826.361	1,843.141	1,775.384	1,901.500	1,194.043

Description:

DDG 51 will be able to operate offensively and defensively, independently or as units of Carrier Strike Groups and Surface Action Groups, in support of Marine Amphibious Task Forces in multi-threat environments that include air, surface and subsurface threats. These ships will respond to Low Intensity Conflict/Coastal and Littoral Offshore Warfare (LIC/CALOW) scenarios as well as open ocean conflict providing or augmenting power projection and forward presence requirements, and escort operations at sea. FY10 and follow ships will provide Ballistic Missile Defense capability. DDG 51 Flight III with the Air and Missile Defense Radar (SPY-6) will significantly enhance Integrated Air and Missile Defense capability against current and future threats.

Note:

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships	**P-1 Line Item Number / Title:** 2122 / DDG-51

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

(1) The FY18-22 acquisition strategy is a 10 ship MYP with options. PB19 reflects savings for those 10 ships associated with EOQ procurement and an MYP strategy. The three additional ships in FY19 (1), FY21 (1), and FY22 (1) also reflects quantity savings over annual ship prices.

(2) Ship quantities increased in FY19/21/22 from PB18 in support of updated Force Structure Assessment requirement for Large Surface Combatants.

Characteristics:	FLIGHT IIA	FLIGHT III
Length Overall	509 ft	509 ft
Beam	59 ft	59 ft
Displacement	9217 TONS	9650 TONS
Draft	-	

Production Status:	DDG 116	DDG 117	DDG 118	DDG 120	DDG 119	DDG 121	DDG 122
Contract Award Date	Feb 2012	Jun 2013	Jun 2013	Mar 2014	Jun 2013	Jun 2013	Jun 2013
Months to Completion							
a) Award to Delivery	74 months	64 months	78 months	79 months	71 months	83 months	97 months
b) Construction Start to Delivery	62 months	49 months	52 months	49 months	46 months	49 months	46 months
Delivery Date	Apr 2018	Oct 2018	Dec 2019	Oct 2020	May 2019	May 2020	Jul 2021
Completion Of Fitting Out	Aug 2018	Feb 2019	Mar 2020	Feb 2021	Sep 2019	Sep 2020	Nov 2021
Obligation Work Limit Date	Jul 2019	Jan 2020	Feb 2021	Jan 2022	Aug 2020	Aug 2021	Oct 2022

Production Status:	DDG 123 (1)	DDG 124	DDG 127	DDG 125	DDG 126	DDG 128 (2)	DDG 129
Contract Award Date	Jun 2013	Jun 2013	Sep 2017	Jun 2013	Jun 2013	Jun 2018	Jun 2018
Months to Completion							
a) Award to Delivery	97 months	108 months	62 months	118 months	132 months	66 months	66 months
b) Construction Start to Delivery	37 months	46 months	51 months	59 months	62 months	53 months	53 months
Delivery Date	Jul 2021	Jun 2022	Nov 2022	Apr 2023	Jun 2024	Dec 2023	Dec 2023
Completion Of Fitting Out	Nov 2021	Oct 2022	Feb 2023	Aug 2023	Oct 2024	Apr 2024	Apr 2024
Obligation Work Limit Date	Oct 2022	Sep 2023	Jan 2024	Jul 2024	Sep 2025	Mar 2025	Mar 2025

Production Status:	DDG 130	DDG 131	DDG 132
Contract Award Date	Jun 2018	Jun 2018	Jun 2019
Months to Completion			
a) Award to Delivery	75 months	75 months	69 months
b) Construction Start to Delivery	50 months	50 months	50 months
Delivery Date	Sep 2024	Sep 2024	Mar 2025
Completion Of Fitting Out	Jan 2025	Jan 2025	Jul 2025
Obligation Work Limit Date	Dec 2025	Dec 2025	Jun 2026

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	Jun 1983	N/A		
Issue Date for TLS	N/A	N/A		
Preliminary Design	Mar 1982	Dec 1982		

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy			Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships		P-1 Line Item Number / Title: 2122 / DDG-51	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A	
Line Item MDAP/MAIS Code: N/A			

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Contract Design	May 1983	Jun 1984		
Detail Design	N/A	N/A		
Request for Proposals	N/A	N/A		
Design Agent	BIW			

Classification of Cost Estimate: CLASS C BUDGET ESTIMATE

Footnotes:

(1) DDG 123, 124, 125, 126 , and 127 reflect contract milestone dates.

(2) DDG 128 and follow dates are notional.

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51

Cost Categories (†) indicates the presence of a P-8a	**FY 2012**		**FY 2013**		**FY 2014**		**FY 2015**		**FY 2016**		**FY 2017**		**FY 2018**		**FY 2019**	
	Qty *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*
Plan Costs	1	122.109	3	67.450	1	74.980	2	68.814	3	204.160	2	81.454	2	72.811	3	74.195
Basic Construction/Conversion		761.786		2,188.286		718.189		1,463.210		2,262.084		1,662.382		1,772.877		2,772.279
Change Orders		20.823		60.461		21.087		42.133		122.000		41.307		53.196		83.168
Electronics (†)		219.431		544.024		226.095		349.746		533.916		346.044		352.897		590.467
Hull, Mechanical, and Electrical (HM&E) (†)		80.265		201.246		91.207		159.533		223.907		150.636		153.633		222.861
Ordnance (†)		629.228		1,185.255		523.108		838.247		1,469.584		1,008.587		1,017.935		1,472.418
Other Cost		70.327		81.240		76.736		77.775		73.033		73.971		75.730		77.301
Total Ship Estimate		**1,903.969**		**4,327.962**		**1,731.402**		**2,999.458**		**4,888.684**		**3,364.381**		**3,499.079**		**5,292.689**
Less Advance Procurement FY 2011		47.719		-		-		-		-		-		-		-
Less Advance Procurement FY 2012		-		92.454		-		-		-		-		-		-
Less Advance Procurement FY 2015		-		-		-		-		134.039		-		-		-
Less Subsequent Full Funding FY 2017		-		-		-		-		433.000		-		-		-
Less Cost to Complete FY 2014		-		100.000		-		-		-		-		-		-
Less Cost to Complete FY 2016		75.014		-		-		-		-		-		-		-
Less Cost to Complete FY 2018		19.436		31.941		-		-		-		-		-		-
Less Cost to Complete FY 2019		-		53.966		-		-		-		-		-		-
Less Cost to Complete FY 2020		-		18.300		-		42.711		-		-		-		-
Less EOQ FY 2013		-		-		115.838		224.851		108.345		13.677		-		-
Less EOQ FY 2014		-		-		-		69.989		130.650		168.912		-		-
Less EOQ FY 2018		-		-		-		-		-		-		-		39.362
Net P-1 Funding		**1,761.800**		**4,031.301**		**1,615.564**		**2,661.907**		**4,082.650**		**3,181.792**		**3,499.079**		**5,253.327**

Remarks:
FY16 & FY17 reflect execution of Flight III. The PB18 ship profile consisted of 3 ships in FY16: 2 FLT IIA ships and 1 FLT III ship. The PB19 ship profile consists of 3 FLT IIA ships in FY16. Changes to basic construction, change orders, and to ordnance in FY 16 reflect the award of DDG 127 in the FLT IIA configuration and the procurement of an additional SPY-D(V) radar to support this configuration. Changes to basic construction and change orders in FY17 reflect the execution of the FLT III ECP in basic construction.

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51

FY16 includes non recurring engineering associated with the introduction of FLT III.

Exhibit P-27, Ship Production Schedule: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51

Ship	Shipbuilder	Fiscal Year	Contract Award	Start of Construction	Delivery Date
DDG 116	Bath Iron Works	2012	Feb 2012	Feb 2013	Apr 2018
DDG 117	Huntington Ingalls Industries	2013	Jun 2013	Sep 2014	Oct 2018
DDG 118	Bath Iron Works	2013	Jun 2013	Aug 2015	Dec 2019
DDG 120	Bath Iron Works	2013	Mar 2014	Sep 2016	Oct 2020
DDG 119	Huntington Ingalls Industries	2014	Jun 2013	Jul 2015	May 2019
DDG 121	Huntington Ingalls Industries	2015	Jun 2013	Apr 2016	May 2020
DDG 122	Bath Iron Works	2015	Jun 2013	Sep 2017	Jul 2021
DDG 123 (1)	Huntington Ingalls Industries	2016	Jun 2013	Jun 2018	Jul 2021
DDG 124	Bath Iron Works	2016	Jun 2013	Aug 2018	Jun 2022
DDG 127	Bath Iron Works	2016	Sep 2017	Aug 2018	Nov 2022
DDG 125	Huntington Ingalls Industries	2017	Jun 2013	May 2018	Apr 2023
DDG 126	Bath Iron Works	2017	Jun 2013	Apr 2019	Jun 2024
DDG 128 (2)	TBD	2018	Jun 2018	Jul 2019	Dec 2023
DDG 129	TBD	2018	Jun 2018	Jul 2019	Dec 2023
DDG 130	TBD	2019	Jun 2018	Jul 2020	Sep 2024
DDG 131	TBD	2019	Jun 2018	Jul 2020	Sep 2024
DDG 132	TBD	2019	Jun 2019	Jan 2021	Mar 2025
DDG 133	TBD	2020	Jun 2018	Jul 2021	Jul 2025
DDG 134	TBD	2020	Jun 2018	Jul 2021	Jul 2025
DDG 135	TBD	2021	Jun 2018	Jul 2022	Jul 2026
DDG 136	TBD	2021	Jun 2018	Jul 2022	Jul 2026
DDG 137	TBD	2021	Jun 2021	Jan 2023	Jan 2027
DDG 138	TBD	2022	Jun 2018	Jul 2023	Jul 2027
DDG 139	TBD	2022	Jun 2018	Jul 2023	Jul 2027
DDG 140	TBD	2022	Jun 2022	Jan 2024	Jan 2028
DDG 141	TBD	2023	Jun 2023	Jul 2024	Jul 2028
DDG 142	TBD	2023	Jun 2023	Jul 2024	Jul 2028
DDG 143	TBD	2023	Jun 2023	Jan 2025	Jan 2029

Footnotes:

(1) DDG 123, 124, 125, 126 , and 127 reflect contract milestone dates.

(2) DDG 128 and follow dates are notional.

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51

Electronics	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
P-35 Items						
SQQ 89 ASW	2	80.107	2	81.693	3	124.991
AN/SLQ-32 (V)6 SEWIP	2	30.697	2	31.305	3	47.897
USQ 82(V) GEDMS	2	27.684	2	28.232	3	43.196
EXCOMM	2	98.485	2	100.435	3	153.667
AN/UPX 29(V) IFF and TACAN	2	14.269	2	14.552	3	22.265
CEC	2	10.860	2	11.075	3	16.947
P-35 Items Subtotal		**262.102**		**267.292**		**408.963**
Major Items						
NAVIGATION SYSTEM	2	7.713	2	7.866	3	12.035
SLQ 25 NIXIE	2	3.186	2	3.249	3	4.971
SRQ 4 LAMPS III	2	8.530	2	8.699	3	13.310
SSEE/SPECTRAL	0	-	0	-	3	51.000
MIDS	2	6.638	2	6.769	3	10.356
MK 53 NULKA	2	4.351	2	4.437	3	6.789
TSA ANTENNA	2	3.465	2	3.534	3	5.408
New Cost Element						
Major Items Subtotal		**33.883**		**34.554**		**103.869**
Other Cost Elements						
MISC. ELECTRONICS	2	50.059	2	51.051	3	77.635
New Cost Element						
Other Cost Elements Subtotal		**50.059**		**51.051**		**77.635**
Total Electronics		**346.044**		**352.897**		**590.467**

Remarks:
FY19 reflects the introduction of SPECTRAL as a replacement for the SSEE system for DDG 51 Class Ships. SSEE is not planned for new construction installation on the FY15 - FY 18 ships. SSEE is included in the Navy's FY18 Unfunded Requirement List.

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	P-1 Line Item Number / Title: 2122 / DDG-51

Hull, Mechanical, and Electrical (HM&E)	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
P-35 Items						
STC 3 IVCS	2	14.931	2	15.227	3	23.298
Main Reduction Gear	2	72.935	2	74.620	3	114.168
P-35 Items Subtotal		**87.866**		**89.847**		**137.466**
Major Items						
Machinery Control System	2	10.416	2	10.622	3	16.251
Integrated Bridge Navigation System	2	8.986	2	9.164	3	14.021
Major Items Subtotal		**19.402**		**19.786**		**30.272**
Other Cost Elements						
MISC. HM&E	2	43.368	2	44.000	3	55.123
Other Cost Elements Subtotal		**43.368**		**44.000**		**55.123**
Total Hull, Mechanical, and Electrical (HM&E)		**150.636**		**153.633**		**222.861**

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	P-1 Line Item Number / Title: 2122 / DDG-51

Ordnance	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
P-35 Items						
AEGIS WEAPON SYSTEM (MK-7)	2	262.078	2	267.267	3	390.356
AN/SPY-6 (AMDR)	2	351.645	2	340.103	3	499.466
VLS MK 41	2	96.945	2	106.748	3	163.190
MK 45 LWG	2	51.853	2	52.880	3	80.907
MK 37 TOMAHAWK	2	25.498	2	26.003	3	39.785
PHALANX (CIWS)	2	16.573	2	16.901	3	25.859
SPQ-9B Radar	2	18.734	2	19.105	3	29.231
P-35 Items Subtotal		**823.326**		**829.007**		**1,228.794**
Major Items						
MK 32 SVTT	2	5.983	2	6.101	3	9.335
ELECTRO-OPTICAL SYSTEM	2	6.331	2	6.456	3	9.878
MK 160 GFCS	2	6.584	2	6.714	3	10.272
Major Items Subtotal		**18.898**		**19.271**		**29.485**
Other Cost Elements						
MISC. ORDNANCE	2	166.363	2	169.657	3	214.139
Other Cost Elements Subtotal		**166.363**		**169.657**		**214.139**
Total Ordnance		**1,008.587**		**1,017.935**		**1,472.418**

Remarks:

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: SQQ 89 ASW	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
Major Hardware	2	46.453	2	47.373	3	72.480
Spares		0.988		1.008		1.542
System Engineering		8.296		8.460		12.944
Technical Engineering Services		4.818		4.913		7.518
Other Costs		19.552		19.939		30.507
Total	**2**	**80.107**	**2**	**81.693**	**3**	**124.991**

Description:

Detect, classify, localize and track submerged submarines under all environmental conditions at long range from ASW ships, using bottom reflected and convergence zone acoustic paths.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	DDG 125	LOCKHEED MARTIN	C/FFP	Mar 2017	Option	2	23.227
FY 2018	DDG 128	LOCKHEED MARTIN	C/FFP	Mar 2018	Option	2	23.687
FY 2019	DDG 130	LOCKHEED MARTIN	C/FFP	Mar 2019	Option	3	24.160

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	14	24	Feb 2020
FY 2018	DDG 128	Dec 2023	26	24	Oct 2019
FY 2019	DDG 130	Sep 2024	26	24	Jul 2020

Competition/Second Source Initiatives:

Competitive

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: AN/SLQ-32 (V)6 SEWIP	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	2	26.095	2	26.611	3	40.715
Spares		0.742		0.757		1.158
System Engineering		1.800		1.836		2.810
Technical Engineering Services		0.262		0.267		0.408
Other Costs		1.798		1.834		2.806
Total	**2**	**30.697**	**2**	**31.305**	**3**	**47.897**

Description:

SLQ-32(V)6 Surface Electronic Warfare Improvement Program (SEWIP) provides the DDG 51 Class Destroyers with the electronic warfare capability of automatically detecting, sorting, classifying, tracking, engaging and continually displaying emitter and platform densities.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2017	DDG 125	LM/GD-AIS	C/FFP	Mar 2017	Option	2	13.048
FY 2018	DDG 128	LM/GD-AIS	C/FFP	Mar 2018	Option	2	13.306
FY 2019	DDG 130	LS/GD-AIS	C/FFP	Mar 2019	Option	3	13.572

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	19	16	May 2020
FY 2018	DDG 128	Dec 2023	28	16	Apr 2020
FY 2019	DDG 130	Sep 2024	28	16	Jan 2021

Competition/Second Source Initiatives:

Competitive

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: USQ 82(V) GEDMS	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
Major Hardware	2	14.808	2	15.101	3	23.105
Technical Data and Documentation		1.317		1.343		2.055
System Engineering		3.192		3.255		4.980
Technical Engineering Services		0.538		0.549		0.840
Other Costs		7.829		7.984		12.216
Total	**2**	**27.684**	**2**	**28.232**	**3**	**43.196**

Description:

Gigabit Ethernet Data Multiplex System (GEDMS) is the mission critical ship-wide network that transfers data associated with Machinery, Steering, Navigation, Combat, Alarms & Indicating, and Damage Control Systems. It is a general purpose modular data transfer system that provides high speed, reliable and survivable data from source systems to user systems automatically or on demand.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	DDG 125	BOEING/DRS	C/FFP	Mar 2017	New	2	7.404
FY 2018	DDG 128	BOEING/DRS	C/FFP	Mar 2018	Option	2	7.551
FY 2019	DDG 130	BOEING/DRS	C/FFP	Mar 2019	Option	3	7.702

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	25	18	Sep 2019
FY 2018	DDG 128	Dec 2023	25	18	May 2020
FY 2019	DDG 130	Sep 2024	25	18	Feb 2021

Competition/Second Source Initiatives:

Competitive

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: EXCOMM	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
Major Hardware	2	58.877	2	60.043	3	91.866
Technical Data and Documentation		0.235		0.240		0.368
Spares		0.543		0.554		0.848
System Engineering		6.128		6.249		9.561
Technical Engineering Services		3.576		3.647		5.580
Other Costs		11.579		11.808		18.066
Assembly & Integration		17.547		17.894		27.378
Total	**2**	**98.485**	**2**	**100.435**	**3**	**153.667**

Description:

The Exterior Communication System (EXCOMM) provides voice, data, teletypewriter (TTY), continuous wave (CW), and other communication services on designated frequencies from VLF to UHF for tactical and record requirements. It includes all external radio communication devices aboard the ship.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	DDG 125	VARIOUS	Various	Various	Various	2	29.439
FY 2018	DDG 128	VARIOUS	Various	Various	Various	2	30.022
FY 2019	DDG 130	VARIOUS	Various	Various	Various	3	30.622

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	15	9	Apr 2021
FY 2018	DDG 128	Dec 2023	15	9	Dec 2021
FY 2019	DDG 130	Sep 2024	15	9	Sep 2022

Competition/Second Source Initiatives:

Numerous contract arrangements (sole source/competitive)

Remarks:

There are numerous components and contracts resulting in various award dates.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: AN/UPX 29(V) IFF and TACAN	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
Major Hardware	2	12.267	2	12.510	3	19.140
Spares		0.154		0.157		0.240
System Engineering		0.743		0.758		1.160
Technical Engineering Services		0.313		0.319		0.489
Other Costs		0.792		0.808		1.236
Total	**2**	**14.269**	**2**	**14.552**	**3**	**22.265**

Description:

The UPX-29 Interrogator System is a centralized Mark XIIA interrogator and target processor. It employs a cooperative challenge and reply technique to positively identify friendly platforms. The system is capable of interrogating Mark XII, Mark XIIA, International Civil Aviation Organization (ICAO), or Federal Aviation Administration (FAA)-compliant IFF transponders using a standard shipboard interrogator set, a target processor, and an Electronically Steerable Antenna (ESA) system. TACAN is a navigational beacon system that provides azimuth, slant range, and station identification information to TACAN equipped aircraft, permitting 24/7, all weather landing operations.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	DDG 125	BAE	SS/FFP	May 2016	Option	2	6.134
FY 2018	DDG 128	BAE	SS/FFP	Jul 2018	New	2	6.255
FY 2019	DDG 130	BAE	SS/FFP	Jul 2019	Option	3	6.380

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	6	24	Oct 2020
FY 2018	DDG 128	Dec 2023	26	24	Oct 2019
FY 2019	DDG 130	Sep 2024	26	24	Jul 2020

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: CEC	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	2	9.301	2	9.485	3	14.513
System Engineering		0.477		0.486		0.744
Technical Engineering Services		0.341		0.348		0.533
Other Costs		0.741		0.756		1.157
Total	**2**	**10.860**	**2**	**11.075**	**3**	**16.947**

Description:

Cooperative Engagement Capability (CEC) is a sensor netting system which distributes sensor data from each CEC equipped ship, aircraft, and/or Cooperating Unit (CU), to all other CUs in the battle force through a real-time, line of sight, high data rate sensor and engagement data distribution network.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2017	DDG 125	DRS	C/FFP	Sep 2017	Option	2	4.651
FY 2018	DDG 128	DRS	C/FFP	Mar 2018	Option	2	4.743
FY 2019	DDG 130	DRS	C/FFP	Mar 2019	Option	3	4.838

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	30	24	Oct 2018
FY 2018	DDG 128	Dec 2023	25	24	Nov 2019
FY 2019	DDG 130	Sep 2024	25	24	Aug 2020

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: STC 3 IVCS	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
Major Hardware	2	9.608	2	9.798	3	14.991
Spares		0.519		0.529		0.810
System Engineering		1.806		1.842		2.819
Technical Engineering Services		0.460		0.470		0.719
Other Costs		2.538		2.588		3.959
Total	**2**	**14.931**	**2**	**15.227**	**3**	**23.298**

Description:

A solid state integrated voice communication system (IVCS) for application with the AEGIS combat system.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	DDG 125	DRS	C/FFP	Jul 2017	Option	2	4.804
FY 2018	DDG 128	DRS	C/FFP	Jul 2018	Option	2	4.899
FY 2019	DDG 130	DRS	C/FFP	Jul 2019	Option	3	4.997

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	30	16	Jun 2019
FY 2018	DDG 128	Dec 2023	31	16	Jan 2020
FY 2019	DDG 130	Sep 2024	31	16	Oct 2020

Competition/Second Source Initiatives:

Competitive

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: Main Reduction Gear	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	2	65.619	2	68.432	3	108.088
System Engineering		-		-		-
Technical Engineering Services		7.316		6.188		6.080
Other Costs		-		-		-
Total	**2**	**72.935**	**2**	**74.620**	**3**	**114.168**

Description:

The contractor will engineer, manufacture, test and deliver a fully operational DDG 51 Main Reduction Gear (MRG). A DDG 51 Class MRG shipset consists of two gear assemblies. Each reduction gear combines the input of two LM2500 engines to convert the high speed, low torque of the engine to low speed, high torque output suitable to drive the propulsion shafting, and the related support systems and equipment.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2017	DDG 125	PHILADELPHIA GEAR	C/FFP	May 2017	New	2	32.810
FY 2018	DDG 128	PHILADELPHIA GEAR	C/FFP	Mar 2018	Option	2	34.216
FY 2019	DDG 130	PHILADELPHIA GEAR	C/FFP	Mar 2019	Option	3	36.029

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	32	30	Feb 2018
FY 2018	DDG 128	Dec 2023	32	30	Oct 2018
FY 2019	DDG 130	Sep 2024	32	30	Jul 2019

Competition/Second Source Initiatives:

Competitive

Remarks:

FY 2018 funding required in March 2018 to support contractually established option dates.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: AEGIS WEAPON SYSTEM (MK-7)	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
Major Hardware	2	153.718	2	156.763	3	227.855
System Engineering		1.734		1.768		2.705
Technical Engineering Services		1.632		1.664		2.546
Other Costs		12.632		12.882		13.140
Logistics Support		19.822		20.214		30.927
Combat System Integration		72.540		73.976		113.183
Total	**2**	**262.078**	**2**	**267.267**	**3**	**390.356**

Description:

AEGIS is a fast reaction, high firepower, all weather weapon system incorporating a high degree of system availability and effectiveness. It consists of a multi-function phase/plane array radar, high powered illuminators, advanced missile guidance and fully digitizalized and integrated combat ship control for radar, weapons and command and decision. An Operational Readiness Test System performs continuous on-line assessment and fault detection.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	DDG 125	LM/ RTN/ GD	Various	Mar 2017	Option	2	76.859
FY 2018	DDG 128	LM/ RTN/ GD	Various	Mar 2018	New	2	78.382
FY 2019	DDG 130	LM/ RTN/ GD	Various	Mar 2019	Option	3	75.952

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	15	36	Jan 2019
FY 2018	DDG 128	Dec 2023	20	36	Apr 2019
FY 2019	DDG 130	Sep 2024	20	36	Feb 2020

Competition/Second Source Initiatives:

Multiple contract arrangements (sole source/competitive)

Remarks:

Contract Data Notes:
AWS Antenna and Signal Processors - Contractor: Lockheed Martin
AWS Spy Transmitter and Fire Control System Transmitter - Contractor: Raytheon
AWS Director/Director Controller - General Dynamics

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: AN/SPY-6 (AMDR)	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
Major Hardware	2	282.545	2	273.103	3	396.955
System Engineering		21.002		19.792		30.282
Technical Engineering Services		15.140		15.435		23.616
Other Costs		23.406		22.035		33.714
Logistics		9.552		9.738		14.899
Total	**2**	**351.645**	**2**	**340.103**	**3**	**499.466**

Description:

The AN/SPY-6 Air and Missile Defense Radar (AMDR) suite consists of an S-Band radar (AMDR-S), an X-band radar (via SPQ-9B on the first 11 SCN ships), and a Radar Suite Controller (RSC). AMDR will provide multi-mission capabilities, simultaneously supporting both long range, exoatmospheric detection, tracking and discrimination of ballistic missiles, as well as Area and Self Defense against air and surface threats.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	DDG 125	RAYTHEON	C/FPIF	May 2017	Option	2	141.273
FY 2018	DDG 128	RAYTHEON	C/FPIF	Mar 2018	Option	2	136.552
FY 2019	DDG 130	RAYTHEON	C/FPIF	Jan 2019	Option	3	132.318

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	24	36	Apr 2018
FY 2018	DDG 128	Dec 2023	28	36	Aug 2018
FY 2019	DDG 130	Sep 2024	28	36	May 2019

Competition/Second Source Initiatives:

Competitive

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: VLS MK 41	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
Major Hardware	2	59.563	2	68.626	3	104.865
Ancillary Equipment		3.129		3.191		4.883
Technical Data and Documentation		0.553		0.564		0.863
System Engineering		13.899		14.174		21.686
Technical Engineering Services		12.816		13.070		19.997
Other Costs		6.985		7.123		10.896
Total	**2**	**96.945**	**2**	**106.748**	**3**	**163.190**

Description:

The VLS is a Missile Launching System which provides Surface Combatants with a launcher to carry, prepare for launch and fire, Anti-Air Warfare, Strike/Surface Warfare, and Anti-Submarine Warfare weapons. The Flight IIA MK-41 VLS Launchers consist of twelve modules comprised of eight cells each.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	DDG 125	LOCKHEED MARTIN	C/FFP	Dec 2014		2	29.782
FY 2018	DDG 128	COMPETITIVE	C/FFP	Aug 2018	New	2	34.313
FY 2019	DDG 130	COMPETITIVE	C/FFP	Aug 2019		3	34.955

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	18	24	Oct 2019
FY 2018	DDG 128	Dec 2023	19	24	May 2020
FY 2019	DDG 130	Sep 2024	19	24	Feb 2021

Competition/Second Source Initiatives:

Competitive

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: MK 45 LWG	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
Major Hardware	2	38.387	2	39.148	3	59.897
Spares		0.328		0.334		0.510
System Engineering		4.639		4.731		7.239
Technical Engineering Services		2.491		2.540		3.887
Other Costs		6.008		6.127		9.374
Total	**2**	**51.853**	**2**	**52.880**	**3**	**80.907**

Description:

The 5" 62 caliber MK 45 Mod 4 Gun is a digitized high energy system with the capability to automatically select, load and fire different types of 5"/62 caliber projectiles.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	DDG 125	BAE AD/MCNALLY	Various	Dec 2017	New	2	19.194
FY 2018	DDG 128	BAE AD/MCNALLY	Various	Mar 2018	Option	2	19.574
FY 2019	DDG 130	BAE AD/MCNALLY	Various	Mar 2019	Option	3	19.966

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	18	24	Oct 2019
FY 2018	DDG 128	Dec 2023	25	24	Nov 2019
FY 2019	DDG 130	Sep 2024	25	24	Aug 2020

Competition/Second Source Initiatives:

Sole Source

Remarks:

Contract Data notes:
Gun Mount contract: BAE Armament Division - Sole Source
Lower Hoist contract: McNally - Sole Source

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: MK 37 TOMAHAWK	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
Major Hardware	2	8.766	2	8.940	3	13.679
Spares		1.426		1.454		2.225
System Engineering		4.435		4.523		6.920
Technical Engineering Services		4.213		4.296		6.573
Other Costs		6.658		6.790		10.388
Total	**2**	**25.498**	**2**	**26.003**	**3**	**39.785**

Description:

The Tactical Tomahawk Weapon Control System (TTWCS) is an open system architecture of work stations, processors, printers, fiber optic Local Area Network (LAN) and the Navy Standard Mass Measurement storage device which provides target data management, engagement planning, weapon selection and initiation and launch functions for the TOMAHAWK cruise missile.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	DDG 125	NSWC PT HUENEME	WR	Apr 2018	Various	2	4.383
FY 2018	DDG 128	NSWC PT HUENEME	WR	Apr 2019	Various	2	4.470
FY 2019	DDG 130	NSWC PT HUENEME	WR	Apr 2020	Various	3	4.560

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	19	8	Jan 2021
FY 2018	DDG 128	Dec 2023	31	8	Sep 2020
FY 2019	DDG 130	Sep 2024	31	8	Jun 2021

Competition/Second Source Initiatives:

Navy construction

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: PHALANX (CIWS)	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	2	12.281	2	12.524	3	19.161
System Engineering		0.831		0.847		1.296
Technical Engineering Services		1.486		1.516		2.319
Other Costs		1.975		2.014		3.083
Total	**2**	**16.573**	**2**	**16.901**	**3**	**25.859**

Description:

Phalanx Close-In Weapon System (CIWS) provides fast reaction terminal defense against anti-ship missiles, aircraft, helicopters, low-slow flyers (e.g. unmanned aerial vehicles) and surface threats. The system is an automatic, self-contained unit consisting of search/track radar, threat evaluation and fire control subsystem, and a 20 mm M61A1 Gatling gun subsystem all mounted in a single structure requiring a minimum of integration with other ship systems.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2017	DDG 125	RAYTHEON	SS/FFP	Sep 2017	New	2	6.141
FY 2018	DDG 128	RAYTHEON	SS/FFP	Apr 2018	Option	2	6.262
FY 2019	DDG 130	RAYTHON	SS/FFP	Apr 2019	New	3	6.387

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	25	22	May 2019
FY 2018	DDG 128	Dec 2023	21	22	May 2020
FY 2019	DDG 130	Sep 2024	21	22	Feb 2021

Competition/Second Source Initiatives:

Sole Source

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51
Equipment Item: SPQ-9B Radar	**PARM Code:** N/A

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	2	15.848	2	16.162	3	24.728
Spares		0.207		0.212		0.324
System Engineering		0.827		0.843		1.290
Technical Engineering Services		0.879		0.896		1.371
Other Costs		0.973		0.992		1.518
Total	**2**	**18.734**	**2**	**19.105**	**3**	**29.231**

Description:

The AN/SPQ-9B Radar detects and tracks low flying Anti-Ship Missile targets in heavy clutter. The mission of the AN/SPQ-9B is currently being expanded to include the capability to detect and classify periscopes with the completion and incorporation of a Periscope Detection and Discrimination (PDD) capability designed to operate concurrently with the AN/SPY-6 capability.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2017	DDG 125	COMPETITIVE	C/FFP	Jun 2018	New	2	7.924
FY 2018	DDG 128	COMPETITIVE	C/FFP	Jun 2018	Option	2	8.081
FY 2019	DDG 130	COMPETITIVE	C/FFP	Mar 2019	Option	3	8.243

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	DDG 125	Apr 2023	24	18	Oct 2019
FY 2018	DDG 128	Dec 2023	26	18	Apr 2020
FY 2019	DDG 130	Sep 2024	26	18	Jan 2021

Competition/Second Source Initiatives:

N/A

Exhibit P-10, Advance Procurement Requirements Analysis (*page 1 - Budget Funding Justification*): PB 2019 Navy			Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1		**P-1 Line Item Number / Title:** 2122 / DDG-51	
First System (2019) Award Date: January 2018	**First System (2019) Completion Date:** July 2024	**Interval Between Systems:** 12 Months	

Cost Elements	Production Leadtime (Months)	When Required* (Months)	FY 2017 ($ M)	FY 2018 ($ M)	FY 2019 ($ M)	FY 2020 ($ M)	FY 2021 ($ M)	FY 2022 ($ M)	FY 2023 ($ M)
SHIP CONSTRUCTION EOQ									
SHIP Construction EOQ FY19 Ships [(7)]	Various	Various	-	12.501	0.000	-	-	-	-
SHIP Construction EOQ FY20 Ships	Various	Various	-	12.500	74.157	-	-	-	-
SHIP Construction EOQ FY21 Ships	Various	Various	-	12.517	111.492	168.014	-	-	-
SHIP Construction EOQ FY22 Ships	Various	Various	-	12.517	111.492	168.014	-	-	-
Total: SHIP CONSTRUCTION EOQ			-	*50.035*	*297.141*	*336.028*	-	-	-
VLS Advanced Procurement									
VLS EOQ FY19 Ship	-	-	-	26.861	0.000	-	-	-	-
VLS EOQ FY20 Ships	-	-	-	13.440	13.563	-	-	-	-
VLS EOQ FY21 Ships	-	-	-	-	40.612	-	-	-	-
VLS EOQ FY22 Ships	-	-	-	-	40.612	-	-	-	-
Total: VLS Advanced Procurement			-	*40.301*	*94.787*	-	-	-	-
Total Advance Procurement/Obligation Authority			**-**	**90.336**	**391.928**	**336.028**	**-**	**-**	**-**

*Note: "When Required" is the number of months required before ship delivery.

Exhibit P-10, Advance Procurement Requirements Analysis (*page 2 - Budget Funding Justification*): PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2122 / DDG-51

Cost Elements	FY 2019						
	Production Leadtime *(Months)*	When Required* *(Months)*	Unit Cost *($ M)*	Contract Forecast Date	2019 Qty *(Each)*	For FY	Total Cost Request *($ M)*
SHIP CONSTRUCTION EOQ							
SHIP Construction EOQ FY19 Ships [(7)]	Various	Various	-		-		0.000
SHIP Construction EOQ FY20 Ships	Various	Various	-	Mar 2019	-	2020	74.157
SHIP Construction EOQ FY21 Ships	Various	Various	-	Mar 2019	-	2021	111.492
SHIP Construction EOQ FY22 Ships	Various	Various	-	Mar 2019	-	2022	111.492
Total: SHIP CONSTRUCTION EOQ							*297.141*
VLS Advanced Procurement							
VLS EOQ FY19 Ship	-	-	-		-		0.000
VLS EOQ FY20 Ships	-	-	-	Jun 2019	-	2020	13.563
VLS EOQ FY21 Ships	-	-	-	Jun 2019	-	2021	40.612
VLS EOQ FY22 Ships	-	-	-	Jun 2019	-	2022	40.612
Total: VLS Advanced Procurement							*94.787*
Total Advance Procurement/Obligation Authority							**391.928**

*Note: "When Required" is the number of months required before ship delivery.

Footnotes:

[(7)] AP is required for shipbuilder Economic Order Quantity procurements for material items to achieve savings under the FY18-22 MYP contract and for VLS procurements.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships	**P-1 Line Item Number / Title:** 2127 / Littoral Combat Ship (LCS)
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A — **Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A	

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	24	3	2	1	-	1	1	1	2	2	14	50
Gross/Weapon System Cost *($ in Millions)*	12,060.361	1,605.222	1,136.071	646.244	0.000	646.244	1,191.084	842.932	1,750.337	1,791.996	14,143.035	35,167.282
Less PY Advance Procurement *($ in Millions)*	158.900	-	-	-	-	-	-	-	-	-	-	158.900
Less Cost To Complete *($ in Millions)*	419.015	41.530	-	-	-	-	-	-	-	-	-	460.545
Net Procurement (P-1) *($ in Millions)*	11,482.446	1,563.692	1,136.071	646.244	0.000	646.244	1,191.084	842.932	1,750.337	1,791.996	14,143.035	34,547.837
Full Funding TOA *($ in Millions)*	11,482.446	1,563.692	1,136.071	646.244	-	646.244	1,191.084	842.932	1,750.337	1,791.996	14,143.035	34,547.837
Plus CY Advance Procurement *($ in Millions)*	158.900	-	-	-	-	-	-	-	-	-	-	158.900
Plus Cost To Complete *($ in Millions)*	159.719	86.000	26.865	103.184	-	103.184	37.092	6.155	41.530	-	-	460.545
Total Obligation Authority *($ in Millions)*	**11,801.065**	**1,649.692**	**1,162.936**	**749.428**	**0.000**	**749.428**	**1,228.176**	**849.087**	**1,791.867**	**1,791.996**	**14,143.035**	**35,167.282**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	446.350	157.503	169.731	169.265	-	169.265	156.028	116.226	134.359	134.057	1,369.950	2,853.469
Total *($ in Millions)*	**12,247.415**	**1,807.195**	**1,332.667**	**918.693**	**-**	**918.693**	**1,384.204**	**965.313**	**1,926.226**	**1,926.053**	**15,512.985**	**38,020.751**
Gross/Weapon System Unit Cost *($ in Millions)*	502.515	535.074	568.036	646.244	-	646.244	1,191.084	842.932	875.169	895.998	1,010.217	703.346

Description:

Provides for the design, construction, integration, and testing of the Littoral Combat Ship (LCS) and the Guided Missile Frigate (FFG(X)), including ordnance, government furnished equipment (GFE), plans and change order costs.

LCS: Operates with focused-mission packages that deploy manned and unmanned vehicles to execute a variety of missions, including anti-submarine warfare (ASW), surface warfare (SUW), and mine countermeasures (MCM). LCS also possesses inherent capabilities, regardless of the mission package installed, including intelligence, surveillance, and reconnaissance (ISR), maritime interdiction/interception operations (MIO), anti-terrorism/force protection (AT/FP), air warfare self-defense, joint littoral mobility, and logistic support for movement of personnel and supplies. This relatively small, shallow-draft, high-speed surface combatant complements the U.S. Navy's Surface Fleet by operating in environments where it is impossible or undesirable to employ larger deeper-draft, multi-mission ships. LCS can deploy independently to overseas littoral regions or remain on station for extended periods of time either with a battle group or through a forward-basing arrangement. LCS will operate with Carrier Strike Groups, Surface Action Groups, or independently as dictated by the mission and environment. Additionally, LCS can operate cooperatively with the U.S. Coast Guard and Allies.

Frigate (starting in FY20): In FY14, the Navy established the requirements for a lethal and survivable small surface combatant ship (later redesignated as Frigate (FF)), above that of Littoral Combat Ship (LCS) to meet future missions. Based upon the Navy's 2016 Force Structure Assessment resulting in validation of the need for 52 small surface combatants and the need to address increasingly complex threats in the global maritime environment, the Navy reassessed the capabilities required to ensure the Frigate paces future threats. The updated assessment was completed to support establishment of top-level FFG(X) requirements in Summer 2017 and resulted in a Navy-approved Capability Development Document (CDD). With FFG(X), the Navy desires to maximize the small surface combatant capabilities in the anti-surface warfare (SUW), anti-submarine warfare (ASW), electromagnetic maneuver warfare (EMW), and air warfare (AW) mission areas, while keeping the ship affordable and as a part of a "high-low" mix of surface ships.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships	**P-1 Line Item Number / Title:** 2127 / Littoral Combat Ship (LCS)
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A — **Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A	

Characteristics:	LM	AUSTAL
Length Overall	115.3m	127.6m
Beam	17.5m	31.6m
Displacement	3089 mt	2842 mt
Draft	4.3m	4.4m

Systems:

Electronics
-NAVY MULTIBAND TERMINAL (NMT)

Ordnance
-SEARAM

Production Status:	LCS 11	LCS 13	LCS 14	LCS 16	LCS 15	LCS 18	LCS 17
Contract Award Date	Mar 2012	Mar 2013	Mar 2013	Mar 2013	Mar 2013	Mar 2014	Mar 2014
Months to Completion							
a) Award to Delivery	75 months	64 months	59 months	61 months	69 months	52 months	63 months
b) Construction Start to Delivery	58 months	53 months	48 months	43 months	48 months	40 months	46 months
Delivery Date	Jun 2018	Jul 2018	Feb 2018	Apr 2018	Dec 2018	Jul 2018	Jun 2019
Completion Of Fitting Out	Nov 2018	Mar 2019	Jul 2018	Jan 2019	Aug 2019	Mar 2019	Feb 2020
Obligation Work Limit Date	Nov 2019	Feb 2020	Jul 2019	Dec 2019	Jul 2020	Feb 2020	Jan 2021

Production Status:	LCS 20	LCS 19	LCS 22	LCS 21	LCS 24	LCS 23	LCS 26
Contract Award Date	Mar 2014	Mar 2014	Mar 2015	Mar 2015	Mar 2015	Nov 2015	Mar 2016
Months to Completion							
a) Award to Delivery	60 months	69 months	53 months	63 months	61 months	60 months	56 months
b) Construction Start to Delivery	37 months	40 months	32 months	40 months	33 months	38 months	34 months
Delivery Date	Mar 2019	Dec 2019	Aug 2019	Jun 2020	Apr 2020	Nov 2020	Nov 2020
Completion Of Fitting Out	Nov 2019	Aug 2020	May 2020	Feb 2021	Jan 2021	Jul 2021	Aug 2021
Obligation Work Limit Date	Oct 2020	Jul 2021	Apr 2021	Jan 2022	Dec 2021	Jun 2022	Jul 2022

Production Status:	LCS 25	LCS 28	LCS 27	LCS 30	LCS 31	LCS 29	LCS 32
Contract Award Date	Mar 2016	Jun 2017	Oct 2017	Oct 2017	Jun 2018	Jun 2018	Mar 2019
Months to Completion							
a) Award to Delivery	63 months	55 months	60 months	60 months	55 months	55 months	55 months
b) Construction Start to Delivery	40 months	39 months	43 months	41 months	43 months	39 months	43 months
Delivery Date	Jun 2021	Jan 2022	Oct 2022	Oct 2022	Jan 2023	Jan 2023	Oct 2023
Completion Of Fitting Out	Feb 2022	Oct 2022	Mar 2023	Jul 2023	Oct 2023	Oct 2023	Jul 2024
Obligation Work Limit Date	Jan 2023	Sep 2023	Feb 2024	Jun 2024	Sep 2024	Sep 2024	Jun 2025

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	N/A	N/A		
Issue Date for TLS	N/A	N/A		
Preliminary Design	Jul 2003	Dec 2003		
Contract Design	May 2004	Dec 2004		
Detail Design	Dec 2004	Jun 2007		
Request for Proposals	N/A	Jan 2010		

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy			Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 02: Other Warships / BSA 1: Other Warships		P-1 Line Item Number / Title: 2127 / Littoral Combat Ship (LCS)	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A	
Line Item MDAP/MAIS Code: N/A			

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Design Agent	LOCKHEED MARTIN - AUSTAL			

Classification of Cost Estimate: CLASS C

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2127 / Littoral Combat Ship (LCS)

Cost Categories (†) indicates the presence of a P-8a	**FY 2012**		**FY 2013**		**FY 2014**		**FY 2015**		**FY 2016**		**FY 2017**		**FY 2018**		**FY 2019**	
	Qty *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*
Plan Costs	4	74.504	4	81.025	4	84.706	3	86.146	3	87.490	3	86.300	2	87.767	1	64.246
Basic Construction/Conversion		1,553.971		1,512.613		1,504.933		1,224.696		1,171.567		1,333.684		891.908		459.774
Change Orders		60.991		64.438		72.896		47.383		33.998		24.000		17.838		9.195
Electronics (†)		47.420		48.249		49.336		43.626		45.411		46.183		35.213		20.601
Hull, Mechanical, and Electrical (HM&E) (†)		13.843		14.078		14.318		11.041		11.228		11.419		7.969		4.563
Ordnance (†)		37.295		33.996		37.759		29.169		29.665		30.169		20.660		12.058
Other Cost		76.927		67.038		69.035		71.469		72.684		73.467		74.716		75.807
Total Ship Estimate		**1,864.951**		**1,821.437**		**1,832.983**		**1,513.530**		**1,452.043**		**1,605.222**		**1,136.071**		**646.244**
Less Advance Procurement FY 2011		78.949		-		-		-		-		-		-		-
Less Advance Procurement FY 2015		-		-		-		-		80.000		-		-		-
Less Cost to Complete FY 2016		82.674		-		-		-		-		-		-		-
Less Cost to Complete FY 2017		3.600		82.400		-		-		-		-		-		-
Less Cost to Complete FY 2018		6.394		-		20.471		-		-		-		-		-
Less Cost to Complete FY 2019		-		-		19.498		83.686		-		-		-		-
Less Cost to Complete FY 2020		-		-		-		2.795		34.297		-		-		-
Less Cost to Complete FY 2021		-		-		-		-		6.155		-		-		-
Less Cost to Complete FY 2022		-		-		-		-		-		41.530		-		-
Net P-1 Funding		**1,693.334**		**1,739.037**		**1,793.014**		**1,427.049**		**1,331.591**		**1,563.692**		**1,136.071**		**646.244**

Remarks:
First Frigate will be awarded in FY20. A Component Cost Position (CCP) will be executed in FY19.

Exhibit P-27, Ship Production Schedule: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2127 / Littoral Combat Ship (LCS)

Ship	Shipbuilder	Fiscal Year	Contract Award	Start of Construction	Delivery Date
LCS 11	LOCKHEED MARTIN	2012	Mar 2012	Aug 2013	Jun 2018
LCS 13	LOCKHEED MARTIN	2013	Mar 2013	Feb 2014	Jul 2018
LCS 14	AUSTAL	2013	Mar 2013	Feb 2014	Feb 2018
LCS 16	AUSTAL	2013	Mar 2013	Sep 2014	Apr 2018
LCS 15	LOCKHEED MARTIN	2013	Mar 2013	Dec 2014	Dec 2018
LCS 18	AUSTAL	2014	Mar 2014	Mar 2015	Jul 2018
LCS 17	LOCKHEED MARTIN	2014	Mar 2014	Aug 2015	Jun 2019
LCS 20	AUSTAL	2014	Mar 2014	Feb 2016	Mar 2019
LCS 19	LOCKHEED MARTIN	2014	Mar 2014	Aug 2016	Dec 2019
LCS 22	AUSTAL	2015	Mar 2015	Dec 2016	Aug 2019
LCS 21	LOCKHEED MARTIN	2015	Mar 2015	Feb 2017	Jun 2020
LCS 24	AUSTAL	2015	Mar 2015	Jul 2017	Apr 2020
LCS 23	LOCKHEED MARTIN	2016	Nov 2015	Sep 2017	Nov 2020
LCS 26	AUSTAL	2016	Mar 2016	Jan 2018	Nov 2020
LCS 25	LOCKHEED MARTIN	2016	Mar 2016	Feb 2018	Jun 2021
LCS 28	AUSTAL	2017	Jun 2017	Oct 2018	Jan 2022
LCS 27	LOCKHEED MARTIN	2017	Oct 2017	Mar 2019	Oct 2022
LCS 30	AUSTAL	2017	Oct 2017	May 2019	Oct 2022
LCS 31	TBD	2018	Jun 2018	Jun 2019	Jan 2023
LCS 29	TBD	2018	Jun 2018	Oct 2019	Jan 2023
LCS 32	TBD	2019	Mar 2019	Mar 2020	Oct 2023
FFG 1	TBD	2020	Jul 2020	Jul 2022	Jul 2026
FFG 2	TBD	2021	Apr 2021	Mar 2023	Jan 2027
FFG 3	TBD	2022	Apr 2022	Nov 2023	Jul 2027
FFG 4	TBD	2022	Apr 2022	Jun 2024	Jan 2028
FFG 5	TBD	2023	Apr 2023	Dec 2024	Jul 2028
FFG 6	TBD	2023	Apr 2023	Jul 2025	Jan 2029

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2127 / Littoral Combat Ship (LCS)

Electronics	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
P-35 Items						
NAVY MULTIBAND TERMINAL (NMT)	3	12.217	2	8.440	1	4.860
P-35 Items Subtotal		**12.217**		**8.440**		**4.860**
Major Items						
AN/URC-141 (C) MIDS ON SHIP (MOS)	3	8.265	2	5.671	1	2.924
MULTI-VEHICLE COMMUNICATION SYSTEM (MVCS)	3	5.501	2	3.774	1	2.163
AN/USQ-172(V)5 GLOBAL COMMAND AND CONTROL SYSTEM - MARITIME (GCCS-M)	3	2.264	2	1.553	1	0.932
COMMON DATA LINK MANAGEMENT SYSTEM (CDLMS) Link-11 (C2P)	2	2.122	1	1.061	1	1.114
AN/USQ-144J(V)2 AUTOMATED DIGITAL NETWORK SYSTEM (ADNS)	3	1.941	2	1.332	1	0.799
ELECTRONIC KEY MANAGEMENT SYSTEM (EKMS)/CRYPTO SYSTEM	3	1.811	2	1.243	1	0.745
DS- LOGISTICS MAINTENANCE AUTOMATED INFO SYSTEM - BAR CODE SUPPLY (BCS) NAVY TACTICAL COMMAND SPT SY	3	1.264	2	0.868	1	0.707
Major Items Subtotal		**23.168**		**15.502**		**9.384**
Other Cost Elements						
OTHER ELECTRONICS	0	10.798	0	11.271	0	6.357
Other Cost Elements Subtotal		**10.798**		**11.271**		**6.357**
Total Electronics		**46.183**		**35.213**		**20.601**

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2127 / Littoral Combat Ship (LCS)

Hull, Mechanical, and Electrical (HM&E)	FY 2017		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Items						
VISUAL LANDING AIDS (VLA)	3	6.941	2	4.850	1	2.682
AN/SRC-59 SHIPWIDE INTERIOR WIRELESS COMMUNICATION SYSTEM (SIWCS)	3	1.824	2	1.272	1	0.737
TRASH DISPOSAL - SMALL PULPER	3	0.526	2	0.366	1	0.201
JOINT BIOLOGICAL POINT DETECTION SYSTEM (JBPDS)	3	0.472	2	0.328	1	0.181
Major Items Subtotal		**9.763**		**6.816**		**3.801**
Other Cost Elements						
OTHER HM&E	0	1.656	0	1.153	0	0.762
Other Cost Elements Subtotal		**1.656**		**1.153**		**0.762**
Total Hull, Mechanical, and Electrical (HM&E)		**11.419**		**7.969**		**4.563**

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2127 / Littoral Combat Ship (LCS)

Ordnance	FY 2017		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
P-35 Items						
SEARAM	3	28.034	2	19.264	1	11.117
P-35 Items Subtotal		**28.034**		**19.264**		**11.117**
Major Items						
ORDNANCE HANDLING EQUIPMENT	2	1.352	2	0.894	1	0.559
SMALL ARMS, MACHINE GUNS	3	0.783	2	0.502	1	0.382
Major Items Subtotal		**2.135**		**1.396**		**0.941**
Total Ordnance		**30.169**		**20.660**		**12.058**

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2127 / Littoral Combat Ship (LCS)
Equipment Item: NAVY MULTIBAND TERMINAL (NMT)	**PARM Code:** PMW170

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	3	10.761	2	7.431	1	4.281
System Engineering		0.194		0.135		0.077
Engr/ILS/Mgmt Spt		0.242		0.168		0.097
Technical Support Services		0.840		0.582		0.334
Program Management		0.180		0.124		0.071
Total	**3**	**12.217**	**2**	**8.440**	**1**	**4.860**

Description:

Navy Multiband Terminal (NMT) radio provides joint interoperable high capability voice, data, and video communications for combatants and Flag-capable ships. It provides the required global connectivity among Fleet units, joint forces, allied and NATO forces, and Naval C4I commands.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2017	LCS 28	RAYTHEON	SS/FFP	Dec 2016	Option	3	3.587
FY 2018	LCS 29	RAYTHEON	SS/FFP	Dec 2017	Option	2	3.716
FY 2019	LCS 32	RAYTHEON	SS/FFP	TBD	Option	1	4.281

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LCS 28	Jan 2022	21	14	Feb 2019
FY 2018	LCS 29	Jan 2023	21	14	Feb 2020
FY 2019	LCS 32	Oct 2023	21	14	Nov 2020

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 02 / 1	**P-1 Line Item Number / Title:** 2127 / Littoral Combat Ship (LCS)
Equipment Item: SEARAM	**PARM Code:** IWS11

P-35 Category	FY 2017		FY 2018		FY 2019	
	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)	Qty (Each)	Total Cost ($ M)
Major Hardware	3	23.769	2	16.333	1	9.127
Technical Data and Documentation		0.148		0.102		0.069
System Engineering		1.045		0.718		0.531
Technical Engineering Services		1.487		1.022		0.643
Software		0.147		0.101		0.079
Test & Evaluation		0.895		0.615		0.463
Program Management		0.543		0.373		0.205
Total	**3**	**28.034**	**2**	**19.264**	**1**	**11.117**

Description:

SeaRAM is an Anti-Ship Missile Defense System and is an evolved Close-In Weapon System (CIWS) composed of key attributes of both the existing Phalanx CIWS and the RAM . SeaRAM is designed to extend the battle space of the CIWS and enable the ship to effectively engage multiple targets.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LCS 28	RAYTHEON	SS/FFP	Mar 2018	New	3	7.923
FY 2018	LCS 29	RAYTHEON	SS/FFP	Mar 2018	New	2	8.166
FY 2019	LCS 32	RAYTHEON	SS/FFP	TBD	Option	1	9.127

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LCS 28	Jan 2022	13	22	Feb 2019
FY 2018	LCS 29	Jan 2023	13	22	Feb 2020
FY 2019	LCS 32	Oct 2023	13	22	Nov 2020

Competition/Second Source Initiatives:

N/A

Remarks:

N/A

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 03: Amphibious Ships / BSA 1: Amphibious Ships	**P-1 Line Item Number / Title:** 3036 / LPD-17
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	12	1	-	-	-	-	-	-	-	-	-	13
Gross/Weapon System Cost *($ in Millions)*	19,536.133	1,786.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	21,322.133
Less PY Advance Procurement *($ in Millions)*	1,636.241	-	-	-	-	-	-	-	-	-	-	1,636.241
Less Cost To Complete *($ in Millions)*	2,050.608	-	-	-	-	-	-	-	-	-	-	2,050.608
Less Subsequent Year Full Funding *($ in Millions)*	869.394	-	-	-	-	-	-	-	-	-	-	869.394
Less Prior Year Full Funding *($ in Millions)*	1,000.000	-	-	-	-	-	-	-	-	-	-	1,000.000
Less Hurricane *($ in Millions)*	1,623.280	-	-	-	-	-	-	-	-	-	-	1,623.280
Less Transfer *($ in Millions)*	279.031	-	-	-	-	-	-	-	-	-	-	279.031
Net Procurement (P-1) *($ in Millions)*	12,077.579	1,786.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	13,863.579
Plus Subsequent Year Full Funding *($ in Millions)*	869.394	-	-	-	-	-	-	-	-	-	-	869.394
Plus Prior Year FF *($ in Millions)*	1,000.000	-	-	-	-	-	-	-	-	-	-	1,000.000
Full Funding TOA *($ in Millions)*	13,946.973	1,786.000	-	-	-	-	-	-	-	-	-	15,732.973
Plus CY Advance Procurement *($ in Millions)*	1,636.241	-	-	-	-	-	-	-	-	-	-	1,636.241
Plus Cost To Complete *($ in Millions)*	2,005.548	45.060	-	-	-	-	-	-	-	-	-	2,050.608
Plus Transfer *($ in Millions)*	279.031	-	-	-	-	-	-	-	-	-	-	279.031
Plus Hurricane *($ in Millions)*	1,623.280	-	-	-	-	-	-	-	-	-	-	1,623.280
Plus Hurricane Supplemental (OF & PD) *($ in Millions)*	25.970	-	-	-	-	-	-	-	-	-	-	25.970
Total Obligation Authority *($ in Millions)*	**19,491.073**	**1,831.060**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**-**	**21,322.133**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	899.632	66.734	30.144	3.545	-	3.545	8.665	14.886	15.031	8.213	144.741	1,191.591
Total *($ in Millions)*	**20,416.675**	**1,897.794**	**30.144**	**3.545**	**-**	**3.545**	**8.665**	**14.886**	**15.031**	**8.213**	**144.741**	**22,539.694**
Gross/Weapon System Unit Cost *($ in Millions)*	1,628.011	1,786.000	-	-	-	-	-	-	-	-	-	1,640.164

Description:

Functional replacement for LKA 113, LPD 4, LSD 36, and LST 1179 classes of Amphibious Ships in embarking, transporting, and landing elements of a Marine landing force in an assault by helicopters, landing craft, amphibious vehicles, and by a combination of these methods to conduct primary amphibious warfare missions.

LPD 29 values and dates are pre-award and are subject to change.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 03: Amphibious Ships / BSA 1: Amphibious Ships	P-1 Line Item Number / Title: 3036 / LPD-17	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

Characteristics: -

Length Overall	208.5 m	684 ft
Beam	31.9 m	105 ft
Displacement	25.3 lmt	24.9 klt
Draft	7.0 m	23 ft

Systems:

Electronics

-Mission Systems

Production Status:	LPD 28	LPD 29
Contract Award Date	Dec 2016	Feb 2018
Months to Completion		
a) Award to Delivery	57 months	60 months
b) Construction Start to Delivery	57 months	58 months
Delivery Date	Sep 2021	Feb 2023
Completion Of Fitting Out	Feb 2022	Aug 2023
Obligation Work Limit Date	Jan 2023	Jul 2024

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	N/A	Sep 1988		
Issue Date for TLS	N/A	N/A		
Preliminary Design	Jan 1993	Nov 1993		
Contract Design	Dec 1993	Mar 1996		
Detail Design	Dec 1996	Jul 2002		
Request for Proposals	N/A	N/A		
Design Agent				

Classification of Cost Estimate: CLASS C

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy			**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1		**P-1 Line Item Number / Title:** 3036 / LPD-17	

Cost Categories (†) indicates the presence of a P-8a	**FY 2016**		**FY 2017**	
	Qty *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*
Basic Construction/Conversion		1,473.276		1,471.000
Change Orders		35.000		29.000
Electronics (†)		189.327		213.455
Hull, Mechanical, and Electrical (HM&E) (†)		15.826		16.200
Ordnance (†)		58.665		49.345
Other Cost		5.976		7.000
Total Ship Estimate		**1,778.070**		**1,786.000**
Less Advance Procurement FY 2013		242.976		-
Less Prior Year Full Funding FY 2015		1,000.000		-
Net P-1 Funding		**535.094**		**1,786.000**

Exhibit P-27, Ship Production Schedule: PB 2019 Navy				Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1		P-1 Line Item Number / Title: 3036 / LPD-17			
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
LPD 28	HUNTINGTON INGALLS INDUSTRIES	2016	Dec 2016	Dec 2016	Sep 2021
LPD 29	HUNTINGTON INGALLS INDUSTRIES	2017	Feb 2018	Apr 2018	Feb 2023

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3036 / LPD-17

Electronics	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
P-35 Items				
Mission Systems	1	45.617	1	48.251
C4ISR	1	66.932	1	77.678
Ship Self Defense System (SSDS)	1	12.228	1	12.212
Cooperative Engagement Capability (CEC)	1	9.382	1	8.835
Interrogator System (IFF)	1	6.370	1	6.859
AN/SLQ-32(V)6 Surface Electronic Warfare Improvement Program (SEWIP)	1	13.349	1	12.771
P-35 Items Subtotal		**153.878**		**166.606**
Major Items				
Advanced Training Domain (ATD) - (BFTT Replacement)		1.532		1.532
AN/WSN-7(RLGN)		2.922		5.118
Nulka Decoy Launching System (DLS)		2.875		1.412
AADS		1.434		1.200
Torpedo Countermeasures Transmitting Set (Nixie)		1.191		2.849
RADIAC		0.077		0.093
AN/SPQ-14 (ASDS)		1.256		-
AN/UQN-10		0.318		0.335
DHYSL		0.450		0.300
Major Items Subtotal		**12.055**		**12.839**
Other Cost Elements				
Miscellaneous Electronics		20.081		30.460
IWS CSI		3.313		3.550
Other Cost Elements Subtotal		**23.394**		**34.010**
Total Electronics		**189.327**		**213.455**

Remarks:

The ASDS, SPQ-14 radar distribution switchboard has been subsumed into the SSDS production hardware as sub-system, IRIS.

LPD 28 funding reflects actual known requirements. LPD 29 is still a notional number and is subject to change after contract award and once engineering technical and program services cost are identified.

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3036 / LPD-17

Hull, Mechanical, and Electrical (HM&E)	FY 2016		FY 2017	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Items				
Boats		0.514		0.526
Truck, Forklift		1.596		2.073
Chemical Warfare Detector		0.248		0.508
Military Payroll System		0.552		0.574
Integrated Condition Assessment System (ICAS)		0.208		0.212
Oily Water Separator		0.273		0.292
Plastic Waste Processing EQP		0.435		0.464
Major Items Subtotal		**3.826**		**4.649**
Other Cost Elements				
Miscellaneous HM&E		12.000		11.551
Other Cost Elements Subtotal		**12.000**		**11.551**
Total Hull, Mechanical, and Electrical (HM&E)		**15.826**		**16.200**

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3036 / LPD-17

Ordnance	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
P-35 Items				
RAM BLOCK II	2	19.980	2	23.661
MK 46 GUN	2	8.530	2	9.022
AN/SPS-48G (REFURB)	1	15.097	0	-
AN/SPQ-9B Radar Set	1	10.170	1	7.991
P-35 Items Subtotal		**53.777**		**40.674**
Major Items				
50 CAL MACHINE GUN		0.021		0.180
ASGSI/HOSS/MWS Fit Control & Inst Land Sys		3.440		3.240
ORDNANCE HANDLING EQUIPMENT		0.427		0.400
Major Items Subtotal		**3.888**		**3.820**
Other Cost Elements				
MISCELLANEOUS ORDNANCE		1.000		4.851
Other Cost Elements Subtotal		**1.000**		**4.851**
Total Ordnance		**58.665**		**49.345**

Remarks:
AN/SPS-48G (REFURB) assets are NO LONGER available. Enterprise Air Surveillance Radar (EASR) is the replacement Air Search Radar and the costs are under development.
LPD 28 funding reflects actual known requirements. LPD 29 is still a notional number and is subject to change after contract award and once engineering technical and program services cost are identified.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3036 / LPD-17
Equipment Item: Mission Systems	**PARM Code:** PMS 317

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	43.790	1	46.238
Other Costs		1.827		2.013
Total	**1**	**45.617**	**1**	**48.251**

Description:

Mission Systems is a microcomputer-based integration of shipboard control electronics; Engineering Control System (ECS), Ship Control System (SCS), HM&E Network, Navigation Data Distribution System (NDDS), Interior Voice Network (IVN), and various distributed Sensors. Mission systems and associated integration will be provided by a combination of CFE and Government supplied material and services.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	LPD 28	Various	SS/FFP	Aug 2016	Option	1	43.790
FY 2017	LPD 29	Various	SS/FFP	TBD	Option	1	46.238

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	LPD 28	Sep 2021	37	24	Aug 2016
FY 2017	LPD 29	Feb 2023	37	24	Jan 2018

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3036 / LPD-17
Equipment Item: C4ISR	**PARM Code:** PMS 317

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	33.791	1	38.389
Spares		0.356		0.645
Technical Engineering Services		5.996		7.395
Ancillary Equipment		0.060		0.085
Documentation and Systems Engineering		4.015		5.264
Other Appropriate Costs		6.589		8.213
Turnkey		16.125		17.687
Total	**1**	**66.932**	**1**	**77.678**

Description:

To provide the link between the ship, the command hierarchy, and other units of the operating forces.
1) Digital Modular Radio-7 increases from LPD 28 to LPD 29 by $2.5M due to the closeout of the previous contract used to fund LPD 28 and the anticipated new cost for the system associated with LPD 29.
2) Navy Multiband Terminal cost increases from LPD 28 to LPD 29 by $4.4M due to the need to purchase the system as a single unit purchase. LPD 28 was purchased under an economic order quantity and was discounted according to the number of buyers on contract.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	LPD 28	Various	Various	Mar 2016	Various	1	33.791
FY 2017	LPD 29	Various	Various	Mar 2017	Various	1	38.389

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	LPD 28	Sep 2021	16	16	Jan 2019
FY 2017	LPD 29	Feb 2023	16	16	Jun 2020

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3036 / LPD-17
Equipment Item: Ship Self Defense System (SSDS)	**PARM Code:** PMS 317

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	9.397	1	7.437
Spares		0.122		0.601
Technical Engineering Services		0.298		0.244
Other Costs		2.068		2.064
Documentation and Systems Engineering		0.343		1.866
Total	**1**	**12.228**	**1**	**12.212**

Description:

Ship Self Defense System Mark 2 is microcomputer-based, self-defense coordination system that integrates and automates multiple sensors, self defense weapons, and softkill systems to provide quick reaction combat capability against anti-ship cruise missile threats.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	LPD 28	Raytheon	C/BA	Jan 2017	New	1	9.397
FY 2017	LPD 29	Raytheon	C/BA		New	1	7.437

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	LPD 28	Sep 2021	17	13	Mar 2019
FY 2017	LPD 29	Feb 2023	17	13	Aug 2020

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3036 / LPD-17
Equipment Item: Cooperative Engagement Capability (CEC)	**PARM Code:** PMS 317

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	7.280	1	7.280
Technical Engineering Services		0.181		0.181
Documentation and Systems Engineering		0.542		0.568
Other Costs		1.379		0.806
Total	**1**	**9.382**	**1**	**8.835**

Description:

Cooperative Engagement Capability (CEC) coordinates all anti-warfare sensors into single, real time, fire control quality composite track which improves battle force air defense.
Production of Planar Array Antenna Assembly (PAAA) production has ended. LPD 28/29 amounts reflect the Common Array Block (CAB) Family of Antenna (FoA) in place of PAAA.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	LPD 28	Raytheon	SS/FFP	Various	Various	1	7.280
FY 2017	LPD 29	Raytheon	SS/FFP	Various	Various	1	7.280

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	LPD 28	Sep 2021	24	18	Mar 2018
FY 2017	LPD 29	Feb 2023	24	18	Aug 2019

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3036 / LPD-17
Equipment Item: Interrogator System (IFF)	**PARM Code:** PMS 317

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	4.093	1	6.062
Spares		0.073		0.163
Technical Engineering Services		0.596		0.088
Other Costs		0.681		0.215
Documentation and Systems Engineering		0.927		0.331
Total	**1**	**6.370**	**1**	**6.859**

Description:

The Transponder Set is an Automatic Identification and Monitoring System (AIMS) Identification Friend or Foe (IFF) system that receives interrogation signals from air, surface, and land IFF - equipped units and automatically replies with a coded response signal that provides ownship position and identification.
Combined buy of LPD 28 with multiple program and other ship combined buys resulted in quantity of 13 units being procured and significant costs savings not possible with lower quantity production runs.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	LPD 28	TBD	TBD	Various	New	1	4.093
FY 2017	LPD 29	TBD	TBD	Various	New	1	6.062

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	LPD 28	Sep 2021	6	30	Sep 2018
FY 2017	LPD 29	Feb 2023	6	30	Feb 2020

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3036 / LPD-17

Equipment Item: AN/SLQ-32(V)6 Surface Electronic Warfare Improvement Program (SEWIP) | **PARM Code:** N/A

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Spares		0.297		0.375
Technical Engineering Services		0.130		0.132
Major Hardware	1	11.448	1	10.750
Other Costs		0.634		0.607
Documentation and System Engineering		0.840		0.907
Total	**1**	**13.349**	**1**	**12.771**

Description:

The AN/SLQ-32(V)6 (SEWIP) is a shipboard system that provides a full suite of Electronic Warfare capabilities designed to protect against anti-cruise ship missile threats.
The SLQ-32 system is obsolete and NO LONGER AVAILABLE for refurbishment. LPD 28 (FY 2016) and LPD 29 (FY 2017) will be built with the SEWIP (Block 2) system.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	LPD 28	TBD	TBD	TBD		1	11.448
FY 2017	LPD 29	TBD	TBD	TBD		1	10.750

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	LPD 28	Sep 2021	24	24	Sep 2017
FY 2017	LPD 29	Feb 2023	24	24	Feb 2019

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3036 / LPD-17
Equipment Item: RAM BLOCK II	**PARM Code:** N/A

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	2	16.901	2	21.085
Spares		0.130		0.129
Technical Engineering Services		0.105		0.302
Other Costs		1.761		1.711
Documentation and Systems Engineering		1.083		0.434
Total	**2**	**19.980**	**2**	**23.661**

Description:

The Rolling Airframe Missile (RAM) Block 2 system is a short-range, fast-reaction, high-firepower, lightweight weapon designed to destroy incoming anti-ship cruise missiles.
LPD 28 (FY 2016) and LPD 29 (FY 2017) will require a RAM Block 2.
LPD 28 achieved additional cost savings due to multi-national Block Buy savings that will not affect the LPD 29 RAM contract.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	LPD 28	TBD	TBD	TBD		2	8.451
FY 2017	LPD 29					2	10.543

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	LPD 28	Sep 2021	22	24	Nov 2017
FY 2017	LPD 29	Feb 2023	22	24	Apr 2019

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3036 / LPD-17
Equipment Item: MK 46 GUN	**PARM Code:** PMS 317

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	2	8.385	2	8.755
Technical Engineering Services		0.145		0.267
Total	**2**	**8.530**	**2**	**9.022**

Description:

The MK 46 Gun is a remotely operated naval gun system using a high velocity cannon and second-generation thermal day-night sight for close-in ship's protection.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	LPD 28	General Dynamics	C/FFP	Mar 2016	Option	2	4.193
FY 2017	LPD 29	General Dynamics	C/FFP	Mar 2017	Option	2	4.378

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	LPD 28	Sep 2021	24	18	Mar 2018
FY 2017	LPD 29	Feb 2023	24	18	Aug 2019

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3036 / LPD-17
Equipment Item: AN/SPS-48G (REFURB)	**PARM Code:** PMS 317

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	13.799	0	-
Spares		0.608		-
Technical Engineering Services		0.182		-
Other Costs		0.387		-
Documentation and Systems Engineering		0.121		-
Total	**1**	**15.097**	**0**	**-**

Description:

The AN/SPS-48G is a long-range, three dimensional, air-search radar system that provides contact range, bearing, and height information.
AN/SPS-48G (REFURB) assets are NO LONGER available. Enterprise Air Surveillance Radar (EASR) is the replacement Air Search Radar and the costs are under development.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	LPD 28	TBD	TBD	TBD		1	13.799

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	LPD 28	Sep 2021	18	27	Dec 2017

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3036 / LPD-17
Equipment Item: AN/SPQ-9B Radar Set	**PARM Code:** PMS 317

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	9.486	1	6.022
Spares		0.127		0.130
Technical Engineering Services		0.209		0.668
Other Costs		0.299		0.698
Documentation and Systems Engineering		0.049		0.473
Total	**1**	**10.170**	**1**	**7.991**

Description:

The AN/SPQ-9B is a high resolution, X-band, narrow beam radar that provides both air and surface tracking information.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	LPD 28	TBD	TBD	TBD		1	9.486
FY 2017	LPD 29	TBD	TBD	TBD		1	6.022

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	LPD 28	Sep 2021	24	24	Sep 2017
FY 2017	LPD 29	Feb 2023	24	24	Feb 2019

Competition/Second Source Initiatives:

N/A

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 03: Amphibious Ships / BSA 1: Amphibious Ships	**P-1 Line Item Number / Title:** 3039 / Expeditionary Sea Base (ESB)
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A — **Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A	

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	5	-	-	1	-	1	1	-	-	-	-	7
Gross/Weapon System Cost *($ in Millions)*	2,799.500	0.000	0.000	650.000	0.000	650.000	650.004	0.000	0.000	0.000	-	4,099.504
Less PY Advance Procurement *($ in Millions)*	179.700	-	-	-	-	-	-	-	-	-	-	179.700
Less Cost To Complete *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	0.000
Less Subsequent Year Full Funding *($ in Millions)*	162.900	-	-	-	-	-	-	-	-	-	-	162.900
Net Procurement (P-1) *($ in Millions)*	2,456.900	0.000	0.000	650.000	0.000	650.000	650.004	0.000	0.000	0.000	-	3,756.904
Plus Subsequent Year Full Funding *($ in Millions)*	162.900	-	-	-	-	-	-	-	-	-	-	162.900
Full Funding TOA *($ in Millions)*	2,619.800	-	-	650.000	-	650.000	650.004	-	-	-	-	3,919.804
Plus CY Advance Procurement *($ in Millions)*	179.700	-	-	-	-	-	-	-	-	-	-	179.700
Plus Cost To Complete *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	0.000
Total Obligation Authority *($ in Millions)*	**2,799.500**	**0.000**	**0.000**	**650.000**	**0.000**	**650.000**	**650.004**	**0.000**	**0.000**	**0.000**	**-**	**4,099.504**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	74.515	18.030	13.224	27.191	-	27.191	16.725	-	-	-	-	149.685
Total *($ in Millions)*	**2,874.015**	**18.030**	**13.224**	**677.191**	**-**	**677.191**	**666.729**	**-**	**-**	**-**	**-**	**4,249.189**
Gross/Weapon System Unit Cost *($ in Millions)*	559.900	-	-	650.000	-	650.000	650.004	-	-	-	-	585.643

Description:

The Expeditionary Mobile Base (ESB) (formerly MLP Afloat Forward Staging Base (AFSB)) will serve as a dedicated Naval Afloat Forward Staging Base, optimized to support naval assets in a variety of missions rather than independently modifying ships-of-opportunity as required to meet these roles. The ESB retains sealift capabilities inherent to the Class through cargo transportation and distribution, but provides enhanced aviation, berthing, small boat handling, and command and control capabilities to meet a broader mission set. The ESB provides the Combatant Commanders flexibility to respond to immediate threats and host task organized forces, including Airborne Mine Countermeasures and Special Forces to confront irregular challenges and counter-terrorism. This includes enhanced logistics and UNREP capability (receive only) and C4I capability to support future missions.

Note:
1) The amounts in the Prior Year Column includes the NDSF MPF,F MLP BLI 00401 Procurement Costs for Expeditionary Transport Dock (ESD) 1, ESD 2, and ESB 3 as well as SCN BLI 3039 for the ESB 4 and ESB 5.

2) The Outfitting and Post Delivery amounts in the Prior Year column represent NDSF BLI 5000 for ESD 1, ESD 2, and ESB 3 as well as SCN BLI 5110 for the ESB 4 and ESB 5.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 03: Amphibious Ships / BSA 1: Amphibious Ships	**P-1 Line Item Number / Title:** 3039 / Expeditionary Sea Base (ESB)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Characteristics:	Nominal Requirements
Length Overall	255M
Beam	50M
Displacement	28879 TONS
Draft	9.1M

Production Status:	ESB 4	ESB 5	ESB 6
Contract Award Date	Dec 2014	Dec 2016	Apr 2019
Months to Completion			
a) Award to Delivery	39 months	29 months	36 months
b) Construction Start to Delivery	29 months	28 months	28 months
Delivery Date	Mar 2018	May 2019	Apr 2022
Completion Of Fitting Out	Jun 2018	Aug 2019	Jul 2022
Obligation Work Limit Date	May 2019	Jul 2020	Jun 2023

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	N/A	N/A		
Issue Date for TLS	N/A	N/A		
Preliminary Design	Sep 2009	Dec 2009		
Contract Design	Dec 2009	Aug 2010		
Detail Design	Aug 2010	Nov 2011		
Request for Proposals	N/A	N/A		
Design Agent				

Classification of Cost Estimate: Budget Quality Class

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3039 / Expeditionary Sea Base (ESB)

Cost Categories (†) indicates the presence of a P-8a	**FY 2014**		**FY 2016**		**FY 2019**	
	Qty *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*
Plan Costs	1		1		1	
Basic Construction/Conversion		558.717		547.908		560.851
Change Orders		5.000		5.517		5.647
Electronics (†)		24.000		65.550		67.098
Hull, Mechanical, and Electrical (HM&E)		12.583		12.260		12.550
Other Cost		3.000		3.765		3.854
Total Ship Estimate		**603.300**		**635.000**		**650.000**
Net P-1 Funding		**603.300**		**635.000**		**650.000**

Remarks:
1. Ship cost increase between FY2014 and FY2016 is to account for SOF requirements being backfitted (using other appropriations) on ESB 4 but included in SCN for ESB 5 and ESB6.

Exhibit P-27, Ship Production Schedule: PB 2019 Navy			Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1		P-1 Line Item Number / Title: 3039 / Expeditionary Sea Base (ESB)			
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
ESB 4	NASSCO	2014	Dec 2014	Oct 2015	Mar 2018
ESB 5	NASSCO	2016	Dec 2016	Jan 2017	May 2019
ESB 6	NASSCO	2019	Apr 2019	Dec 2019	Apr 2022
ESB 7	NASSCO	2020	Apr 2020	Dec 2020	Apr 2023

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	P-1 Line Item Number / Title: 3039 / Expeditionary Sea Base (ESB)

Electronics	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2019 Qty (Each)	FY 2019 Total Cost ($ M)
P-35 Items				
C4ISR	1	27.000	1	27.638
AVIATION ELECTRONICS	1	38.550	1	39.460
P-35 Items Subtotal		**65.550**		**67.098**
Total Electronics		**65.550**		**67.098**

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3039 / Expeditionary Sea Base (ESB)
Equipment Item: C4ISR	**PARM Code:** N/A

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2019 Qty (Each)	FY 2019 Total Cost ($ M)
Major Hardware	1	16.135	1	16.516
Spares		1.855		1.899
System Engineering		5.565		5.696
Technical Engineering Services		1.060		1.085
Other Costs		2.385		2.442
Total	**1**	**27.000**	**1**	**27.638**

Description:

C4ISR items consist of equipment which is in a containerized environment for secure storage and operation of ship's C2 equipment (Next Generation Wideband Communications, SMIS, (classified and unclassified networks).
Additional cryptographic equipment above the equipment provided with SMIS, Military radios to provide VHF, UHF Line of Site, and UHF SATCOM, Commercial Broadband Satellite Program (CBSP) for wideband SATCOM to provide voice and data communications to the shore.
A Navy network consisting of a rack of electronic boxes that will provide NIPRNET, SIPRNET and CENTRIX plus additional hardware and software to support Military Detachment functions, laptops and printers to outfit several added spaces supporting embarked units: briefing room, tactical operations center, planning room, intel room, training center and communication room. The infrastructure to support installation of a HF radio.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	ESB 5	Booz, Allen and Hamilton (BAH)	C/FFP	Oct 2016	Option	1	16.135
FY 2019	ESB 6	Booz, Allen and Hamilton (BAH)	C/FFP	Jul 2019	Option	1	16.516

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	ESB 5	May 2019	19	12	Oct 2016
FY 2019	ESB 6	Apr 2022	19	12	Sep 2019

Competition/Second Source Initiatives:

N/A

Remarks:

1) BAH is prime contractor with several other contractors. NSWC Panama City is the coordinating activity for the C4ISR system.
2) C4ISR: Cost for the ESB 5 through ESB 6 includes the procurement, installation and testing of additional radios and antennas, satellite communication terminals, and network capabilities in support of the Special Operations Forces (SOF) capability.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3039 / Expeditionary Sea Base (ESB)
Equipment Item: AVIATION ELECTRONICS	**PARM Code:** N/A

P-35 Category	FY 2016 Qty (Each)	FY 2016 Total Cost ($ M)	FY 2019 Qty (Each)	FY 2019 Total Cost ($ M)
Major Hardware	1	30.292	1	31.007
Spares		0.150		0.154
System Engineering		0.454		0.465
Technical Engineering Services		3.587		3.672
Technical Data		0.116		0.119
Other Costs		3.951		4.043
Total	**1**	**38.550**	**1**	**39.460**

Description:

Consists of a Moriah wind measuring system to support helicopter operations, a Tactical Air Navigation System (TACAN) to provide a navigation beacon for aircraft, Advanced Stabilized Glide Slope Indicator (ASGSI) and Visual Landing Aids (VLA).

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2016	ESB 5	Various	Various	Oct 2016	Option	1	30.292
FY 2019	ESB 6	Various	Various	Jul 2019	Option	1	31.007

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2016	ESB 5	May 2019	17	14	Oct 2016
FY 2019	ESB 6	Apr 2022	17	14	Sep 2019

Competition/Second Source Initiatives:

N/A

Remarks:

1) AVIATION ELECTRONICS: Aviation navigation and landing system electronics.
2) Contract Data and Delivery Date information are estimated and provided based on planned execution.
3) Cost for the ESB 5 and ESB 6 includes the procurement, installation and test infrastructure of antennas and control systems for the Air Search Radar, Small Tactical Unmanned Aerial System (STUAS), MQ-8C Ground Control Station (GCS) and Fire Scout UAV system in support of the Special Operations Forces (SOF) capability.

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 03: Amphibious Ships / BSA 1: Amphibious Ships	**P-1 Line Item Number / Title:** 3041 / LHA Replacement

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604567N
Line Item MDAP/MAIS Code: 333		

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	2	1	-	-	-	-	-	-	-	-	-	3
Gross/Weapon System Cost *($ in Millions)*	6,456.010	3,834.282	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	191.892	10,482.184
Less PY Advance Procurement *($ in Millions)*	642.994	505.636	-	-	-	-	-	-	-	-	191.892	1,340.522
Less Cost To Complete *($ in Millions)*	247.788	-	-	-	-	-	-	-	-	-	-	247.788
Less Subsequent Year Full Funding *($ in Millions)*	3,294.477	1,710.927	-	-	-	-	-	-	-	-	-	5,005.404
Less Hurricane *($ in Millions)*	202.000	-	-	-	-	-	-	-	-	-	-	202.000
Net Procurement (P-1) *($ in Millions)*	2,068.751	1,617.719	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	3,686.470
Plus Subsequent Year Full Funding *($ in Millions)*	3,294.477	-	1,710.927	-	-	-	-	-	-	-	-	5,005.404
Full Funding TOA *($ in Millions)*	5,363.228	1,617.719	1,710.927	-	-	-	-	-	-	-	-	8,691.874
Plus CY Advance Procurement *($ in Millions)*	1,148.630	-	-	-	-	-	-	-	-	191.892	-	1,340.522
Plus Cost To Complete *($ in Millions)*	208.488	-	14.200	25.100	-	25.100	-	-	-	-	-	247.788
Plus Hurricane *($ in Millions)*	202.000	-	-	-	-	-	-	-	-	-	-	202.000
Total Obligation Authority *($ in Millions)*	**6,922.346**	**1,617.719**	**1,725.127**	**25.100**	**0.000**	**25.100**	**0.000**	**0.000**	**0.000**	**191.892**	**-**	**10,482.184**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	107.972	15.731	14.969	32.569	-	32.569	11.361	-	-	-	-	182.602
Total *($ in Millions)*	**7,030.318**	**1,633.450**	**1,740.096**	**57.669**	**-**	**57.669**	**11.361**	**-**	**-**	**191.892**	**-**	**10,664.786**
Gross/Weapon System Unit Cost *($ in Millions)*	3,228.005	3,834.282	-	-	-	-	-	-	-	-	-	3,494.061

Description:

The LHA(R) Program replaces the Tarawa Class (LHA 1) Amphibious Assault Ships and the retiring Wasp Class (LHD 1) Amphibious Assault Class Ships. The LHA(R) class program ensures that the Amphibious Fleet remains capable of Expeditionary Warfare well into the 21st Century and provide for an affordable and sustainable amphibious ship development program. Provides forward presence and power projection as an integral part of joint, interagency, and multinational maritime expeditionary forces. Operates for sustained periods in transit to and operations in an Amphibious Objective Area to include the embarkation, deployment, and landing of a Marine Landing Force and supporting forces by helicopters and tilt rotors supported by Joint Strike Fighters F-35B.

LHA(R) Flight 0 is considered a transitional increment intended to increase the aviation capabilities of amphibious assault ships. The LHA(R) Flight 1 design continues the incremental development of amphibious assault ships by adding a well deck, and increasing flight deck capacity by reducing the footprint of the island and adding a sponson. LHA(R) Flight 0 consisted of two ships, LHA 6 and LHA 7. LHA(R) Flight 1 is the second increment in the LHA 6 Class with LHA 8 being the first ship of Flight 1. Advance Procurement funds are shown in FY 2023 for the second Flight 1 ship, LHA 9.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 03: Amphibious Ships / BSA 1: Amphibious Ships	**P-1 Line Item Number / Title:** 3041 / LHA Replacement	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** 0604567N
Line Item MDAP/MAIS Code: 333		

Characteristics:

	LHA 7	LHA 8
Length Overall	844ft	844ft
Beam	106ft	106ft
Displacement	45,594 tons	43,000 tons
Draft	29ft 1in	27ft 8in

Systems:

Electronics

-Command, Control, Communication, Computer Intelligence Surveillance and Reconnaissance (C4ISR)
-MK 2 MOD 4E Ship Self Defense System (SSDS)
-Integrated Voice Network (IVN)
-AN/SLQ-32(V), Surface Warfare Improvement Program (SEWIP)
-AN/SPN-50 (V)1
-Joint Precision Approach and Landing System (JPALS)
-Hierarchical Yet Dynamically Reprogrammable Architecture (HYDRA) AN/SRC-55
-AN/UPX-29(V), Identification Friend or Foe (IFF) MK12
-Ring Laser Gyro Navigator (RLGN) AN/WSN-7
-Amphibious Air Traffic Control Direct Altitude and Identity Readout (AATC-DAIR) AN/TPX-42
-Aircraft Control Approach Central AN/SPN-35C
-Aircraft Approach Control Transmitting Set (AACTS) AN/SPN-41B

Ordnance

-Enterprise Air Surveillance Radar (EASR)
-NATO Sea Sparrow Missile System (NSSMS) MK 57 Mod 14
-MK31 Mod 3, Rolling Airframe Missile (RAM) (Tech Refresh)
-PHALANX Block 1B MK15 Mod 21 & 22, Close-in Weapon System (CIWS)
-Vertical/Stationary Take-Off Landing Optical Landing System (VSTOL OLS)
-AN/SPQ-9B Radar Set

Production Status:	LHA 7	LHA 8
Contract Award Date	May 2012	Jun 2017
Months to Completion		
a) Award to Delivery	79 months	79 months
b) Construction Start to Delivery	65 months	63 months
Delivery Date	Dec 2018	Jan 2024
Completion Of Fitting Out	Oct 2019	Sep 2024
Obligation Work Limit Date	Sep 2020	Aug 2025

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	N/A	N/A		
Issue Date for TLS	N/A	N/A		
Preliminary Design	Nov 2011	Mar 2013		
Contract Design	Mar 2013	Sep 2014		
Detail Design	Jun 2017	Apr 2019		
Request for Proposals	Jun 2015	Dec 2015		

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy			Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 03: Amphibious Ships / BSA 1: Amphibious Ships		P-1 Line Item Number / Title: 3041 / LHA Replacement	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: 0604567N	
Line Item MDAP/MAIS Code: 333			

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Design Agent	Huntington Ingalls Inc.			

Classification of Cost Estimate: CLASS C

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy		**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement	

Cost Categories (†) indicates the presence of a P-8a	**FY 2011**		**FY 2017**	
	Qty *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*
Plan Costs	1	60.084	1	329.093
Basic Construction/Conversion		2,538.275		2,770.836
Change Orders		121.628		97.790
Electronics (†)		260.786		314.754
Hull, Mechanical, and Electrical (HM&E) (†)		56.013		63.184
Ordnance (†)		115.562		158.708
Other Cost		98.945		99.917
Total Ship Estimate		**3,251.293**		**3,834.282**
Less Advance Procurement FY 2009		176.351		-
Less Advance Procurement FY 2010		169.320		-
Less Advance Procurement FY 2015		-		29.093
Less Advance Procurement FY 2016		-		476.543
Less Subsequent Full Funding FY 2012		1,928.692		-
Less Subsequent Full Funding FY 2018		-		1,710.927
Less Cost to Complete FY 2018		14.200		-
Less Cost to Complete FY 2019		25.100		-
Net P-1 Funding		**937.630**		**1,617.719**

Exhibit P-27, Ship Production Schedule: PB 2019 Navy					Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1			P-1 Line Item Number / Title: 3041 / LHA Replacement		
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
LHA 7	HII	2011	May 2012	Jul 2013	Dec 2018
LHA 8	HII	2017	Jun 2017	Oct 2018	Jan 2024

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement

Electronics	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
P-35 Items		
Command, Control, Communication, Computer Intelligence Surveillance and Reconnaissance (C4ISR)	1	147.479
MK 2 MOD 4E Ship Self Defense System (SSDS)	1	26.185
Integrated Voice Network (IVN)	1	16.165
AN/SLQ-32(V), Surface Warfare Improvement Program (SEWIP)	1	15.513
AN/SPN-50 (V)1	1	11.145
Joint Precision Approach and Landing System (JPALS)	1	7.893
Hierarchical Yet Dynamically Reprogrammable Architecture (HYDRA) AN/SRC-55	1	7.503
AN/UPX-29(V), Identification Friend or Foe (IFF) MK12	1	6.993
Ring Laser Gyro Navigator (RLGN) AN/WSN-7	1	6.002
Amphibious Air Traffic Control Direct Altitude and Identity Readout (AATC-DAIR) AN/TPX-42	1	5.729
Aircraft Control Approach Central AN/SPN-35C	1	4.548
Aircraft Approach Control Transmitting Set (AACTS) AN/SPN-41B	1	4.397
P-35 Items Subtotal		**259.552**
Major Items		
AN/USG-2, Cooperative Engagement Transmission Processing Set (CETPS)	1	10.397
USQ-82, Gigabit Ethernet Data Multiplex System (GEDMS)	1	6.525
AN/SLQ-25C, Torpedo Countermeasures Transmitting Set (NIXIE)	2	6.211
AN/USQ-T46(V), Battle Force Tactical Training (BFTT)	1	4.002
Announcing Systems AN/SIA-127H	1	3.007
SATCC	1	2.035
Amphibious Assault Direction System (AADS)	1	1.949
Digital Photo Lab	1	1.870
MK 53 NULKA Decoy Launching System (DLS) Mod 3	1	1.725
Print Shop	1	1.539
30 TV	1	1.263
Next Generation Navigational Radar	1	1.173
Major Items Subtotal		**41.696**
Other Cost Elements		
Miscellaneous Electronics		13.506
Other Cost Elements Subtotal		**13.506**
Total Electronics		**314.754**

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement

Remarks:
For LHA(R) Flight 1 ships:

- Enterprise Air Surveillance Radar (EASR) suite will be a modern, long-range, three-dimensional (3-D) radar used to search, detect and provide space-stabilized, three-coordinate (range, bearing, height) data for air intercept control and designation to a weapon system and Air Traffic Control (ATC) system. The LHA(R) Flight 1 configuration includes a rotating antenna array, below decks radar and cooling equipment. The EASR suite replaces the SPS 48/49 air-search radar systems. AN/SPS-48 air search radars have not been in production for several years. All existing AN/SPS-48 radars are installed on operational Fleet ships. Without the EASR suite, LHA(R) Flight 1 ships will not have an air-search radar for self-defense and airspace deconfliction.

- AN/SPN-50 Shipboard Air Traffic Radar (SATR) system provides aircraft position, radar signal and radar data. Air traffic controllers use the data for aircraft sequencing and separation, airspace identification and containment, safety alerts, traffic advisories and landing guidance. AN/SPN-50 SATR replaces the AN/SPN 43C SATR. EASR and AN/SPN-50 are designed to be integrated systems whereas EASR and AN/SPN 43C are not as compatible.

- The dual mast antenna configuration Cooperative Engagement Transmission Processing Set (CETPS) replaces the single mast CETPS. The CETPS dual mast antenna configuration improves the compatibility with AN/SPN-50 and allows the ship to maintain 360-degree data link coverage and full combat systems capability.

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement

Hull, Mechanical, and Electrical (HM&E)	FY 2017	
	Qty *(Each)*	Total Cost *($ M)*
Major Items		
Equipment & Engineering		50.738
SUPSHIP Material/Services		4.196
Test & Instrumentation		8.250
Major Items Subtotal		**63.184**
Total Hull, Mechanical, and Electrical (HM&E)		**63.184**

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement

Ordnance	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
P-35 Items		
Enterprise Air Surveillance Radar (EASR)	1	40.063
NATO Sea Sparrow Missile System (NSSMS) MK 57 Mod 14	1	32.302
MK31 Mod 3, Rolling Airframe Missile (RAM) (Tech Refresh)	2	15.743
PHALANX Block 1B MK15 Mod 21 & 22, Close-in Weapon System (CIWS)	1	14.431
Vertical/Stationary Take-Off Landing Optical Landing System (VSTOL OLS)	1	13.824
AN/SPQ-9B Radar Set	1	10.909
P-35 Items Subtotal		**127.272**
Major Items		
MK 38 Mod 2 Stabilized Gun Stand Assembly	3	6.145
AN/SPQ-14	1	2.537
MORIAH	1	1.762
Major Items Subtotal		**10.444**
Other Cost Elements		
Aviation Support		7.745
Miscellaneous Ordnance		2.800
Total Ship Test Program		10.447
Other Cost Elements Subtotal		**20.992**
Total Ordnance		**158.708**

Remarks:

The $15.89M cost increase from PB 2017 was based on the initial contract award contract costs for the Enterprise Air Surveillance Radar (EASR) suite. EASR is the replacement for the AN/SPS-48 air-search radar that has not been in production for several years. All existing AN/SPS-48 radars are installed on operational Fleet ships, without the EASR, LHA(R) Flight 1 ships will not have an air-search radar for self-defense and airspace deconfliction.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement

Equipment Item: Command, Control, Communication, Computer Intelligence Surveillance and Reconnaissance (C4ISR) **PARM Code:** PEO C4I

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	89.070
Technical Data and Documentation		0.965
Spares		2.319
System Engineering		14.809
Technical Engineering Services		23.962
Other Costs		16.354
Total	**1**	**147.479**

Description:

The Command, Control, Communication, Computer Intelligence Surveillance and Reconnaissance (C4ISR) system is used to prove the link between the ship, the command hierarchy, and other units of the operating forces.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	Various	Various	Various	Various	1	89.070

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	0		Various

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: MK 2 MOD 4E Ship Self Defense System (SSDS)	**PARM Code:** PEO IWS1A5

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	8.414
Technical Data and Documentation		1.483
Spares		0.808
System Engineering		5.590
Technical Engineering Services		0.468
Other Costs		9.422
Total	**1**	**26.185**

Description:

The Ship Self Defense System (SSDS) MK 2, Mod (x) Common C2 system provides capabilities for multi-mission requirements including Ship Protection against air, surface, and subsurface threats using both own-ship and remote data (Joint Composite Track Number (JCTN) and Joint Data Network (JDN)) in support of the Anti-Air Warfare (AAW) Capstone requirements.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	Various	C/FFP	Nov 2018	New	1	8.414

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	38	24	Nov 2018

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: Integrated Voice Network (IVN)	**PARM Code:** SEA05H

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	12.650
Technical Data and Documentation		0.500
System Engineering		0.760
Technical Engineering Services		1.570
Other Costs		0.685
Total	**1**	**16.165**

Description:

The Integrated Voice Communications Network (IVCN) is an overarching engineering approach to establish consistent engineering practices and integrated voice communication capabilities across the Fleet. IVN is a fully integrated, supportable communication voice solution.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	Various	C/FFP	Jan 2019	New	1	12.650

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	54	6	Jan 2019

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: AN/SLQ-32(V), Surface Warfare Improvement Program (SEWIP)	**PARM Code:** PEO IWS2E

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	13.421
Technical Data and Documentation		0.039
Spares		0.498
System Engineering		0.919
Technical Engineering Services		0.118
Other Costs		0.518
Total	**1**	**15.513**

Description:

SEWIP Block 2 is a scalable Electronic Warfare enterprise suite to provide improved Electromagnetic Interference (EMI) mitigation and Combat System Interface capabilities to select new construction ships as well as upgrade current AN/SLQ-32(V)3 and (V)4 Electronic Warfare (EW) suites on existing ships. It provides enhanced shipboard Electronic Warfare (EW) for early detection, analysis, threat warning and protection from anti-ship missiles. SEWIP Block 2 focused on Electronic Support (ES) capability improvements.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	Various	Various	Oct 2019	New	1	13.421

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	30	18	Jan 2020

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: AN/SPN-50 (V)1	**PARM Code:** NAVAIR PMA213

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	9.014
Technical Data and Documentation		0.120
Spares		0.716
System Engineering		0.703
Technical Engineering Services		0.095
Other Costs		0.497
Total	**1**	**11.145**

Description:

AN/SPN-50 Shipboard Air Traffic Radar (SATR) system provides aircraft position, radar signal and radar data. Air traffic controllers use the data for aircraft sequencing and separation, airspace identification and containment, safety alerts, traffic advisories and landing guidance.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	SAAB	TBD	Aug 2019	New	1	9.014

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	29	24	Aug 2019

Competition/Second Source Initiatives:

N/A

Remarks:

AN/SPN-50 SATR system replaces the AN/SPN 43C SATR. EASR and AN/SPN-50 are designed to be integrated systems whereas EASR and AN/SPN 43C are not as compatible.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: Joint Precision Approach and Landing System (JPALS)	**PARM Code:** NAVAIR PMA213

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	4.898
Spares		0.914
System Engineering		0.739
Technical Engineering Services		1.075
Other Costs		0.267
Total	**1**	**7.893**

Description:

The Joint Precision Approach Landing System (JPALS) works with the GPS satellite navigation system to provide accurate, reliable and high-integrity guidance for F-35 and future JPALS equipped aircraft. The system features anti-jam protection to ensure mission continuity in hostile environments. JPALS is a differential GPS that will provide an adverse weather precision approach and landing capability.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	TBD	TBD	May 2019	New	1	4.898

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	44	12	May 2019

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: Hierarchical Yet Dynamically Reprogrammable Architecture (HYDRA) AN/SRC-55	**PARM Code:** SEA05H

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	4.542
Technical Data and Documentation		0.301
Spares		0.093
System Engineering		1.139
Technical Engineering Services		0.642
Other Costs		0.786
Total	**1**	**7.503**

Description:

AN/SRC-55 HYDRA is a Wireless Interior Communications System that provides wire free mobile communications throughout the ship. HYDRA supports security, navigation, combat systems, engineering, damage control, maintenance and general operations such as maneuvering and docking, shore patrol and beach guard. It is interoperable with other shipboard communication systems and it has improved capabilities over the legacy wireless systems.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	Various	Various	Jul 2020	New	1	4.542

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	36	6	Jul 2020

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: AN/UPX-29(V), Identification Friend or Foe (IFF) MK12	**PARM Code:** NAVAIR PMA213

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	6.061
Spares		0.106
System Engineering		0.293
Technical Engineering Services		0.103
Other Costs		0.430
Total	**1**	**6.993**

Description:

Identification Friend or Foe (IFF) is an approved and fully supported centralized Mark XII Interrogator system. It uses one receiver transmitter that synchronizes video with up to four radar sweeps. It supplies synthetic video (symbology) to, and accepts requests from, as many as 22 remote locations. It provides digital target reporting to the combat systems/weapon systems computer via full scan, sectored, and/or pop-up interrogations. It provides instantaneous target reporting at requested range and azimuth through the use of an electronically-steered Antenna Group OE-120/UPX or OE-120A/UPX.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	Various	C/FFP	Feb 2019	New	1	6.061

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	35	24	Feb 2019

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	P-1 Line Item Number / Title: 3041 / LHA Replacement	
Equipment Item: Ring Laser Gyro Navigator (RLGN) AN/WSN-7		PARM Code: PEO IWS6.0

P-35 Category	FY 2017	
	Qty *(Each)*	Total Cost *($ M)*
Major Hardware	1	5.491
System Engineering		0.072
Technical Engineering Services		0.300
Other Costs		0.139
Total	**1**	**6.002**

Description:

The AN/WSN-7(V) Ring Laser Gyro Navigation System provides real-time navigation data for use by navigation and combat systems.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity *(Each)*	Unit Cost *($ M)*
FY 2017	LHA 8	Various	C/FFP	May 2019	New	1	5.491

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	38	18	May 2019

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: Amphibious Air Traffic Control Direct Altitude and Identity Readout (AATC-DAIR) AN/TPX-42	**PARM Code:** NAVAIR PMA213

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	4.246
Spares		0.208
System Engineering		0.506
Technical Engineering Services		0.056
Other Costs		0.713
Total	**1**	**5.729**

Description:

The Amphibious Air Traffic Control (AATC) Direct Altitude and Identity Readout (DAIR) is an automatic beacon and radar that when integrated with an air traffic control radar, provides numeric and symbolic displays of position, identity, and altitude of aircraft in the terminal airspace on an operator's Plane Position Indicator (PPI) display.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	NAWCAD	WR	Jul 2019	New	1	4.246

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	30	24	Jul 2019

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: Aircraft Control Approach Central AN/SPN-35C	**PARM Code:** NAVAIR PMA213

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	3.529
System Engineering		0.603
Technical Engineering Services		0.083
Other Costs		0.333
Total	**1**	**4.548**

Description:

The AN/SPN-35 is a precision approach radar that provides glide slope guidance to Navy and Marine Corps aircraft. The system is used in conjunction with a vertical/short take-off and landing, optical landing system and the AN/SPN-41 Instrument Control Landing System for precision landing operations. It is also used for aircraft recovery during adverse weather and night conditions.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	NAWCAD	WR	Jul 2018	New	1	3.529

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	30	36	Jul 2018

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: Aircraft Approach Control Transmitting Set (AACTS) AN/SPN-41B	**PARM Code:** NAVAIR PMA213

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	3.381
System Engineering		0.622
Technical Engineering Services		0.063
Other Costs		0.331
Total	**1**	**4.397**

Description:

The AN/SPN-41 transmitting set is an electronic instrument control landing system that provides proper flight path data to an approaching aircraft. The AN/SPN-41 has two separate transmitters (azimuth and elevation) with
individual antennas used for sector scanning. It provides primary or backup instrument approach capability.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	NAWCAD	WR	Jun 2017	New	1	3.381

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	40	39	Jun 2017

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: Enterprise Air Surveillance Radar (EASR)	**PARM Code:** PEO IWS2.0

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	28.932
Technical Data and Documentation		0.042
Spares		1.337
System Engineering		0.472
Technical Engineering Services		3.436
Other Costs		5.844
Total	**1**	**40.063**

Description:

Enterprise Air Surveillance Radar (EASR) suite will be a modern, long-range, three-dimensional (3-D) radar used to search, detect and provide space-stabilized, three-coordinate (range, bearing, height) data for air intercept control and designation to a weapon system and Air Traffic Control (ATC) system. The LHA(R) Flight 1 configuration includes a rotating antenna array, below decks radar and cooling equipment. Without the EASR suite, LHA(R) Flight 1 ships will not have an air-search radar for self-defense and airspace deconfliction.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	Various	Various	Jun 2018	New	1	28.932

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	37	30	Jun 2018

Competition/Second Source Initiatives:

N/A

Remarks:

The $15.89M cost increase from PB 2017 was based on the initial contract award contract costs for the EASR suite. The EASR suite is the replacement for the AN/SPS-48 air-search radar that has not been in production for several years. All existing AN/SPS-48 radars are installed on operational Fleet ships, without the EASR suite.

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: NATO Sea Sparrow Missile System (NSSMS) MK 57 Mod 14	**PARM Code:** PEO IWS3.0

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	21.343
Spares		1.437
System Engineering		1.486
Technical Engineering Services		3.118
Other Costs		4.918
Total	**1**	**32.302**

Description:

The NSSMS MK 57 is a short-range weapon system, which provides self-defense capability against air-to-surface missiles, surface-to-surface missiles, manned attack aircraft, and surface craft. The system is designed to provide these capabilities under both clear and adverse environmental conditions as well as in a hostile electronics attack environment. NSSMS MK 57 performs target engageability; and provides launcher control, missile control and missing firing orders.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	RAYTHEON	C/FFP	Apr 2018	New	1	21.343

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	33	36	Apr 2018

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: MK31 Mod 3, Rolling Airframe Missile (RAM) (Tech Refresh)	**PARM Code:** PEO IWS3B

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	2	10.954
Technical Data and Documentation		0.663
Spares		0.103
System Engineering		2.145
Technical Engineering Services		0.083
Other Costs		1.795
Total	**2**	**15.743**

Description:

The MK 49 Mod 3 Rolling Airframe Missile (RAM) Weapon System is a lightweight, low cost, high power system for anti-ship missile defense against current and evolving threats.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	RAYTHEON	C/FFP	Feb 2018	New	2	5.477

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	47	24	Feb 2018

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: PHALANX Block 1B MK15 Mod 21 & 22, Close-in Weapon System (CIWS)	**PARM Code:** PEO IWS3.0

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	11.627
Technical Data and Documentation		0.098
Spares		0.383
System Engineering		0.514
Technical Engineering Services		0.720
Other Costs		1.089
Total	**1**	**14.431**

Description:
Phalanx is a high fire rate Close-In Weapon System (CIWS) that automatically acquires, tracks and destroys Anti-Ship cruise missiles, Helos, Aircraft, and all types of Surface threats.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	RAYTHEON	C/FFP	Feb 2018	New	1	11.627

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	47	24	Feb 2018

Competition/Second Source Initiatives:
N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: Vertical/Stationary Take-Off Landing Optical Landing System (VSTOL OLS)	**PARM Code:** NAVAIR PMA251

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	11.700
Technical Data and Documentation		0.150
Spares		0.413
System Engineering		0.319
Technical Engineering Services		0.781
Other Costs		0.461
Total	**1**	**13.824**

Description:

The Vertical/Stationary Take-Off Landing (VSTOL) Optical Landing System is a visual landing aid that displays glide path and trend information to the VSTOL pilot preparing to land on ship. The system can guide an aircraft to the ship from a distance of 0.8 nautical miles. The OLS guides the aircraft to 50 feet above the flight deck up to the final approach phase.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	LAKEHURST MANUFACTURING	WR	Jul 2017	New	1	11.700

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	30	48	Jul 2017

Competition/Second Source Initiatives:

N/A

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3041 / LHA Replacement
Equipment Item: AN/SPQ-9B Radar Set	**PARM Code:** PEO IWS2B

P-35 Category	FY 2017 Qty (Each)	FY 2017 Total Cost ($ M)
Major Hardware	1	8.890
Technical Data and Documentation		0.115
Spares		0.129
System Engineering		0.365
Technical Engineering Services		0.684
Other Costs		0.726
Total	**1**	**10.909**

Description:

The AN/SPQ-9B is an X-Band Horizon Search, pulse Doppler, frequency agile radar designed for the littoral environment. It has a very high clutter improvement factor supporting a very low false track rate in the littorals and in high clutter environments.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2017	LHA 8	NGES	SS/FFP	Jul 2019	New	1	8.890

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2017	LHA 8	Jan 2024	30	24	Jul 2019

Competition/Second Source Initiatives:

N/A

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Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 03: Amphibious Ships / BSA 1: Amphibious Ships	**P-1 Line Item Number / Title:** 3043 / Expeditionary Fast Transport (EPF)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	8	-	-	-	-	-	-	-	-	-	-	8
Gross/Weapon System Cost *($ in Millions)*	1,579.897	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	1,579.897
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Less Cost To Complete *($ in Millions)*	61.090	-	-	-	-	-	-	-	-	-	-	61.090
Less Program Support *($ in Millions)*	2.732	-	-	-	-	-	-	-	-	-	-	2.732
Net Procurement (P-1) *($ in Millions)*	1,516.075	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	1,516.075
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Plus Cost To Complete *($ in Millions)*	47.835	13.255	-	-	-	-	-	-	-	-	-	61.090
Plus Program Support *($ in Millions)*	2.732	-	-	-	-	-	-	-	-	-	-	2.732
Total Obligation Authority *($ in Millions)*	**1,566.642**	**13.255**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**-**	**1,579.897**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	62.019	13.119	9.987	9.018	-	9.018	2.403	0.002	-	0.002	-	96.550
Total *($ in Millions)*	**1,628.661**	**26.374**	**9.987**	**9.018**	**-**	**9.018**	**2.403**	**0.002**	**-**	**0.002**	**-**	**1,676.447**
Gross/Weapon System Unit Cost *($ in Millions)*	197.487	-	-	-	-	-	-	-	-	-	-	197.487

Description:

Future joint forces will be responsive, deployable, agile, versatile, lethal, survivable, and sustainable. The nation will need lift assets that can provide for assured access, decrease predictability and dwell time, and have the capacity to quickly deliver troops and equipment together in a manner that provides for unit integrity. Expeditionary Fast Transport (EPF) (formerly Joint High Speed Vessel) will provide combatant commanders high-speed intra-theater sealift with inherent cargo handling capability and the agility to achieve positional advantage over operational distances. Not limited to major ports, the EPF will be able to operate in austere port environments.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 03: Amphibious Ships / BSA 1: Amphibious Ships	P-1 Line Item Number / Title: 3043 / Expeditionary Fast Transport (EPF)	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A		

Characteristics:	Aluminum Catamaran
Length Overall	338 ft
Beam	93.5 ft
Displacement	2359 Long Tons
Draft	12.5 ft

Systems:
Electronics
-C4ISR

Production Status:	EPF 10	EPF 11	EPF 12
Contract Award Date	Dec 2012	Sep 2016	Sep 2016
Months to Completion			
a) Award to Delivery	68 months	30 months	38 months
b) Construction Start to Delivery	26 months	26 months	26 months
Delivery Date	Aug 2018	Mar 2019	Nov 2019
Completion Of Fitting Out	Nov 2018	Jun 2019	Feb 2020
Obligation Work Limit Date	Oct 2019	May 2020	Jan 2021

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	N/A	N/A		
Issue Date for TLS	N/A	N/A		
Preliminary Design	Jan 2007	Jul 2008		
Contract Design	Jan 2007	Jul 2008		
Detail Design	Nov 2008	Dec 2009		
Request for Proposals	N/A	N/A		
Design Agent				

Classification of Cost Estimate: CLASS C

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1	**P-1 Line Item Number / Title:** 3043 / Expeditionary Fast Transport (EPF)

Cost Categories (†) indicates the presence of a P-8a	**FY 2013**		**FY 2015**		**FY 2016**	
	Qty *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*
Plan Costs	1		1		1	
Basic Construction/Conversion		175.540		169.795		176.610
Change Orders		2.552		4.855		4.960
Electronics (†)		10.030		14.985		16.840
Hull, Mechanical, and Electrical (HM&E) (†)		5.114		5.908		14.050
Other Cost		4.987		4.457		12.540
Total Ship Estimate		**198.223**		**200.000**		**225.000**
Less Cost to Complete FY 2014		2.732		-		-
Less Cost to Complete FY 2015		2.040		-		-
Less Cost to Complete FY 2016		3.638		-		-
Less Cost to Complete FY 2017		6.545		-		-
Net P-1 Funding		**183.268**		**200.000**		**225.000**

Exhibit P-27, Ship Production Schedule: PB 2019 Navy			Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 03 / 1			P-1 Line Item Number / Title: 3043 / Expeditionary Fast Transport (EPF)		
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
EPF 10	AUSTAL	2013	Dec 2012	Jun 2016	Aug 2018
EPF 11	AUSTAL	2015	Sep 2016	Jan 2017	Mar 2019
EPF 12	AUSTAL	2016	Sep 2016	Sep 2017	Nov 2019

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5025 / TAO Fleet Oiler

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: P452

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	1	-	1	2	-	2	1	2	1	2	7	17
Gross/Weapon System Cost *($ in Millions)*	689.639	0.000	542.767	1,052.172	0.000	1,052.172	536.288	1,035.190	521.998	1,101.225	4,611.434	10,090.713
Less PY Advance Procurement *($ in Millions)*	-	-	73.079	75.068	-	75.068	75.046	74.416	74.334	75.830	77.398	525.171
Less Cost To Complete *($ in Millions)*	15.449	-	3.700	-	-	-	-	-	-	-	-	19.149
Net Procurement (P-1) *($ in Millions)*	674.190	0.000	465.988	977.104	0.000	977.104	461.242	960.774	447.664	1,025.395	4,534.036	9,546.393
Plus CY Advance Procurement *($ in Millions)*	-	73.079	75.068	75.046	-	75.046	74.416	74.334	75.830	77.398	-	525.171
Plus Cost To Complete *($ in Millions)*	-	-	-	15.449	-	15.449	3.700	-	-	-	-	19.149
Total Obligation Authority *($ in Millions)*	**674.190**	**73.079**	**541.056**	**1,067.599**	**0.000**	**1,067.599**	**539.358**	**1,035.108**	**523.494**	**1,102.793**	**4,534.036**	**10,090.713**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	-	-	0.054	17.712	-	17.712	45.955	70.209	40.835	34.749	353.540	563.054
Total *($ in Millions)*	**674.190**	**73.079**	**541.110**	**1,085.311**	**-**	**1,085.311**	**585.313**	**1,105.317**	**564.329**	**1,137.542**	**4,887.576**	**10,653.767**
Gross/Weapon System Unit Cost *($ in Millions)*	689.639	-	542.767	526.086	-	526.086	536.288	517.595	521.998	550.613	658.776	593.571

Description:

T-AO 205 John Lewis Fleet Oiler Class will recapitalize the existing T-AO 187 fleet oiler class. The Navy's Combat Logistics Force (CLF) oilers supply fuel and dry cargo to Navy ships at sea. The T-AO Class will operate as a shuttle ships from resupply posts to customer ships. Additionally, in conjunction with a T-AKE, they will accompany and stay on-station with a Carrier Strike Group (CSG) to provide fuel as required to customer ships.

Note:
T-AO 205 Class PB19 changes reflect adjustments to support Navy Component Cost Position (CCP) developed for combined Milestone B/C conducted September 2017, and the acceleration of two hulls per year in FY 2019, FY 2021 and FY 2023.
FY 2019 Cost to Complete funds prior year FY16 Lead Hull (T-AO 205) Government Furnished Equipment (GFE) in Electronics and HM&E, and Change Orders.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5025 / TAO Fleet Oiler	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: P452		

Characteristics:	**T-AO**	
Length Overall	746 ft	
Beam	106 ft	
Displacement	24140 LT	(Lightship)
Draft	36 ft	

Production Status:	**T-AO 205**	**T-AO 206**	**T-AO 207**	**T-AO 208**
Contract Award Date	Jun 2016	Mar 2018	Jan 2019	Jan 2019
Months to Completion				
a) Award to Delivery	53 months	37 months	32 months	37 months
b) Construction Start to Delivery	26 months	24 months	23 months	23 months
Delivery Date	Nov 2020	Apr 2021	Sep 2021	Feb 2022
Completion Of Fitting Out	Feb 2021	Jul 2021	Dec 2021	May 2022
Obligation Work Limit Date	Jan 2022	Jun 2022	Nov 2022	Apr 2023

Design Schedule	**Start / Issue**	**Complete / Response**	**Reissue**	**Reissue Complete / Response**
Issue Date for TLR	N/A	N/A		
Issue Date for TLS	N/A	N/A		
Preliminary Design	N/A	N/A		
Contract Design	N/A	N/A		
Detail Design	Jun 2016	Jun 2018		
Request for Proposals	Jun 2015	Dec 2015		
Design Agent				

Classification of Cost Estimate:

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5025 / TAO Fleet Oiler

Cost Categories (†) indicates the presence of a P-8a	**FY 2016**		**FY 2018**		**FY 2019**	
	Qty *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*	**Qty** *(Each)*	**Total Cost** *($ M)*
Plan Costs	1	102.121	1	-	2	-
Basic Construction/Conversion		540.086		489.027		964.030
Change Orders		8.118		4.890		9.500
Electronics (†)		27.899		26.650		54.366
Hull, Mechanical, and Electrical (HM&E) (†)		11.415		22.200		24.276
Total Ship Estimate		**689.639**		**542.767**		**1,052.172**
Less Advance Procurement FY 2017		-		73.079		-
Less Advance Procurement FY 2018		-		-		75.068
Less Cost to Complete FY 2019		15.449		-		-
Less Cost to Complete FY 2020		-		3.700		-
Net P-1 Funding		**674.190**		**465.988**		**977.104**

Remarks:
T-AO 205 Class PB19 changes reflect adjustments to support Navy Component Cost Position (CCP) developed for combined Milestone B/C conducted September 2017, and the acceleration of two hulls per year in FY 2019, FY 2021 and FY 2023.
FY 2019 Cost to Complete funds prior year FY16 Lead Hull (T-AO 205) Government Furnished Equipment (GFE) in Electronics and HM&E ($12.749 million) and Change Orders ($2.7000 million).
FY 2020 Cost to Complete funds FY18 Follow-on Hull (T-AO 206) Government Furnished Equipment (GFE) in Electronics.

Exhibit P-27, Ship Production Schedule: PB 2019 Navy			Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1			P-1 Line Item Number / Title: 5025 / TAO Fleet Oiler		
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
T-AO 205	GD NASSCO	2016	Jun 2016	Sep 2018	Nov 2020
T-AO 206	GD NASSCO	2018	Mar 2018	Apr 2019	Apr 2021
T-AO 207	GD NASSCO	2019	Jan 2019	Oct 2019	Sep 2021
T-AO 208	GD NASSCO	2019	Jan 2019	Mar 2020	Feb 2022
T-AO 209	GD NASSCO	2020	Jan 2020	Sep 2020	Aug 2022
T-AO 210	GD NASSCO	2021	Jan 2021	Mar 2021	Feb 2023
T-AO 211 (1)	TBD	2021	Jan 2021	Mar 2022	Feb 2024
T-AO 212	TBD	2022	Jan 2022	Aug 2022	Jul 2024
T-AO 213	TBD	2023	Jan 2023	Mar 2023	Feb 2025
T-AO 214	TBD	2023	Jan 2023	Mar 2024	Feb 2026

Footnotes:

(1) T-AO 211 will be the Lead Hull on follow-on contract. Dates provided are notional estimates.

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5025 / TAO Fleet Oiler

Electronics	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)	FY 2019 Qty (Each)	FY 2019 Total Cost ($ M)
P-35 Items				
Radio Communication System (RCS) TURNKEY	1	6.463	2	13.184
P-35 Items Subtotal		**6.463**		**13.184**
Major Items				
Consolidated Afloat Networks and Enterprise Services (CANES)	1	2.828	2	5.770
Digital Modular Radio (DMR)	1	4.742	2	9.674
Commercial Broadband Satellite Program (CBSP)	1	1.915	2	3.906
AN/SLQ-25 NIXIE	1	1.921	2	3.918
AN/USQ-155 Tactical Variant Switch (TVS)	1	1.326	2	2.706
Major Items Subtotal		**12.732**		**25.974**
Other Cost Elements				
Minor Systems		7.455		15.208
Other Cost Elements Subtotal		**7.455**		**15.208**
Total Electronics		**26.650**		**54.366**

Remarks:
FY 2020 Cost to Complete funds FY18 Follow-on Hull (T-AO 206) Government Furnished Equipment (GFE) in Electronics.

Exhibit P-8a, Analysis of Ship Cost Estimates: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5025 / TAO Fleet Oiler

Hull, Mechanical, and Electrical (HM&E)	FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Major Items				
Engineering Services		20.665		22.710
Logistics Support Services		1.535		1.566
Major Items Subtotal		**22.200**		**24.276**
Total Hull, Mechanical, and Electrical (HM&E)		**22.200**		**24.276**

Remarks:
FY18 HM&E Engineering Services ($20.665M) provides support for 2 years (FY17-FY18) and includes T-AO 206 FY17 Advance Procurement (AP) ($8.200M) and T-AO 206 FY18 Full Funding ($12.465M).

Exhibit P-35, Major Ship Component Fact Sheet: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5025 / TAO Fleet Oiler
Equipment Item: Radio Communication System (RCS) TURNKEY	**PARM Code:** N/A

P-35 Category	FY 2018 Qty (Each)	FY 2018 Total Cost ($ M)	FY 2019 Qty (Each)	FY 2019 Total Cost ($ M)
Major Hardware	1	1.208	2	2.464
Ancillary Equipment		0.105		0.214
Technical Engineering Services		1.009		2.058
Ship Installation		3.741		7.632
Program Management		0.400		0.816
Total	**1**	**6.463**	**2**	**13.184**

Description:

The Radio Communication System (RCS) consists of the subsystems that provide data and voice communications across the RF spectrum. The RCS will be comprised of subsystems provided from various sources, including SPAWAR Program of Record systems, commercial systems, and associated ancillary equipment that can be obtained through the stock system and bought commercially. These subsystems will be integrated into one system and will include the automated and manual patching equipment required to configure these subsystems. The subsystems included in the RCS include the High Frequency 400 Watt System, Digital Modular Radio (DMR) VHF/UHF Line of Sight and UHF SATCOM voice, Naval Modular Automated Communications System (NAVMACS) Naval Messaging System, Battle Force Tactical Network (BFTN), Tactical Variant Switch (TVS), Tactical Voice Terminal (TVT), Automated Digital Networks System (ADNS), Commercial Broadband Satellite Program (CBSP), Fleet Broadcast, Navy Order wire (NOW) Terminals, OE-570A/WSC UHF SATCOM Antenna, Portable Communications Equipment (PCE) and Cryptologic equipment. The subsystems are integrated by SPAWAR Systems Center Atlantic at the Charleston, SC Test and Integration Facility with the proper interfaces to operate as an overall system. The RCS subsystems and interfaces will be tested prior to shipment for installation on board the T-AO ships.

Contract Data:

Program Year	Hull	Prime Contractor	Contract Method/Type	Award Date	New/Option	Quantity (Each)	Unit Cost ($ M)
FY 2018	T-AO 206	TBD	TBD	TBD		1	1.208
FY 2019	T-AO 207	TBD	TBD	TBD		2	1.232

Delivery Date:

Program Year	Hull	Earliest Ship Delivery Date	Months Required Before Delivery	Production Leadtime	Required Award Date
FY 2018	T-AO 206	Apr 2021	7	14	Apr 2019
FY 2019	T-AO 207	Sep 2021	7	14	Sep 2019

Competition/Second Source Initiatives:

N/A

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Exhibit P-10, Advance Procurement Requirements Analysis (*page 1 - Budget Funding Justification*): PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5025 / TAO Fleet Oiler

First System (2019) Award Date:	First System (2019) Completion Date:	Interval Between Systems:
January 2018	January 2021	12 Months

Cost Elements	Production Leadtime (Months)	When Required* (Months)	FY 2017 ($ M)	FY 2018 ($ M)	FY 2019 ($ M)	FY 2020 ($ M)	FY 2021 ($ M)	FY 2022 ($ M)	FY 2023 ($ M)
Basic Construction/Conversion									
Propulsion, Auxiliary, Machinery, and Components [8]	12-24	Various	60.480	72.088	72.006	71.315	71.171	72.604	74.107
Total: Basic Construction/Conversion			*60.480*	*72.088*	*72.006*	*71.315*	*71.171*	*72.604*	*74.107*
Electronics									
Digital Modular Radio (DMR) [9]	15	18	2.922	2.980	3.040	3.101	3.163	3.226	3.291
AN/SLQ-25 NIXIE	-	-	1.477	-	0.000	-	-	-	-
Total: Electronics			*4.399*	*2.980*	*3.040*	*3.101*	*3.163*	*3.226*	*3.291*
Hull, Mechanical, and Electrical (HM&E)									
Class Engineering Efforts [10]	-	42	8.200	-	0.000	-	-	-	-
Total: Hull, Mechanical, and Electrical (HM&E)			*8.200*	-	-	-	-	-	-
Total Advance Procurement/Obligation Authority			**73.079**	**75.068**	**75.046**	**74.416**	**74.334**	**75.830**	**77.398**

*Note: "When Required" is the number of months required before ship delivery.

Exhibit P-10, Advance Procurement Requirements Analysis (*page 2 - Budget Funding Justification*): PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5025 / TAO Fleet Oiler

Cost Elements	FY 2019 Production Leadtime (Months)	When Required* (Months)	Unit Cost ($ M)	Contract Forecast Date	2019 Qty (Each)	For FY	Total Cost Request ($ M)
Basic Construction/Conversion							
Propulsion, Auxiliary, Machinery, and Components [8]	12-24	Various	72.006	Jan 2019	1	2020	72.006
Total: Basic Construction/Conversion							*72.006*
Electronics							
Digital Modular Radio (DMR) [9]	15	18	3.040	Jan 2019	1	2020	3.040
AN/SLQ-25 NIXIE	-	-	-		-		0.000
Total: Electronics							*3.040*
Hull, Mechanical, and Electrical (HM&E)							
Total: Hull, Mechanical, and Electrical (HM&E)							-
Total Advance Procurement/Obligation Authority							**75.046**

*Note: "When Required" is the number of months required before ship delivery.

Footnotes:

[8] Funding to procure Contractor furnished Long Lead Time Materials (LLTM) and engineering related activities.

[9] Funding to procure Government furnished Long Lead Time Materials (LLTM) and engineering related activities.

[10] P-35 FY18 HM&E Engineering Services ($20.665M) provides support for 2 years (FY17-FY18) and includes T-AO 206 FY17 Advance Procurement (AP) ($8.200M) and T-AO 206 FY18 Full Funding ($12.465M).

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5035 / Towing, Salvage, and Rescue Ship (ATS)

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	1	-	1	1	-	1	2	1	1	1	-	8
Gross/Weapon System Cost *($ in Millions)*	75.000	0.000	76.204	80.517	0.000	80.517	153.248	74.376	75.053	76.597	-	610.995
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	75.000	0.000	76.204	80.517	0.000	80.517	153.248	74.376	75.053	76.597	-	610.995
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**75.000**	**0.000**	**76.204**	**80.517**	**0.000**	**80.517**	**153.248**	**74.376**	**75.053**	**76.597**	**-**	**610.995**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	-	-	-	4.898	-	4.898	7.370	9.315	-	-	50.072	71.655
Total *($ in Millions)*	**75.000**	**-**	**76.204**	**85.415**	**-**	**85.415**	**160.618**	**83.691**	**75.053**	**76.597**	**50.072**	**682.650**
Gross/Weapon System Unit Cost *($ in Millions)*	75.000	-	76.204	80.517	-	80.517	76.624	74.376	75.053	76.597	-	76.374

Description:

The Navy requires ocean-going towing, salvage, and rescue capabilities to support Fleet operations. The Navy's current capabilities are provided by four T-ATF 166 class Fleet Tugs and four T-ARS 50 class Salvage ships which reach the end of their expected service lives starting in 2020 and 2025, respectively. The T-ATS program will recapitalize the current Fleet Tugs and Salvage Ships with a common hull Towing, Salvage and Rescue Ship (T-ATS) that is capable of performing the missions of the retiring T-ATF and T-ARS classes.

Note:
The increase in FY 2019 supports procurement of battle spares which includes: anchor, controllable pitch blades, controllable pitch hub, crankshaft, diesel turbocharger, propeller fixed pitch (LH and RH),generator motor, line shaft, power distribution transformers, power generation main circuit breaker, propulsion motor rotor, propulsion, thruster motor and drive and thruster impeller.

Characteristics:

	Notional
Length Overall	270 ft
Beam	59 ft
Displacement	5,000 tons
Draft	20 ft

Production Status:	T-ATS 1601	T-ATS 1801	T-ATS 1901
Contract Award Date	Feb 2018	May 2018	Feb 2019
Months to Completion			
a) Award to Delivery	30 months	31 months	26 months
b) Construction Start to Delivery	20 months	20 months	20 months
Delivery Date	Aug 2020	Dec 2020	Apr 2021
Completion Of Fitting Out	Sep 2020	Jan 2021	May 2021
Obligation Work Limit Date	Aug 2021	Dec 2021	Apr 2022

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy			Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost		P-1 Line Item Number / Title: 5035 / Towing, Salvage, and Rescue Ship (ATS)	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A		Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A			

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	Dec 2015	Mar 2016		
Issue Date for TLS	N/A	N/A		
Preliminary Design	N/A	N/A		
Contract Design	N/A	N/A		
Detail Design	Feb 2018	Dec 2018		
Request for Proposals	Mar 2017	May 2017		
Design Agent	TBD			

Classification of Cost Estimate:

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5035 / Towing, Salvage, and Rescue Ship (ATS)

Cost Categories	FY 2016		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Basic Construction/Conversion	1	64.500	1	65.790	1	70.106
Change Orders		3.225		2.237		2.013
Electronics		4.436		4.527		4.663
Hull, Mechanical, and Electrical (HM&E)		2.839		3.650		3.735
Total Ship Estimate		**75.000**		**76.204**		**80.517**
Net P-1 Funding		**75.000**		**76.204**		**80.517**

Remarks:
The increase in FY 2019 basic construction supports procurement of battle spares including: anchor, controllable pitch blades, controllable pitch hub, crankshaft, diesel turbocharger, propeller fixed pitch (LH and RH), generator motor, line shaft, power distribution transformers, power generation main circuit breaker, propulsion motor rotor, propulsion, thruster motor and drive and thruster impeller.

Exhibit P-27, Ship Production Schedule: PB 2019 Navy			Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1			P-1 Line Item Number / Title: 5035 / Towing, Salvage, and Rescue Ship (ATS)		
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
T-ATS 1601	TBD	2016	Feb 2018	Dec 2018	Aug 2020
T-ATS 1801	TBD	2018	May 2018	Apr 2019	Dec 2020
T-ATS 1901	TBD	2019	Feb 2019	Aug 2019	Apr 2021
T-ATS 2001	TBD	2020	Feb 2020	Aug 2020	Apr 2022
T-ATS 2002	TBD	2020	Feb 2020	Dec 2020	Aug 2022
T-ATS 2101	TBD	2021	Feb 2021	Aug 2021	Apr 2023
T-ATS 2201	TBD	2022	Feb 2022	Aug 2022	Apr 2024
T-ATS 2301	TBD	2023	Feb 2023	Aug 2023	Apr 2025

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5092 / Moored Training Ship

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	1	1	-	-	-	-	-	-	-	-	-	2
Gross/Weapon System Cost *($ in Millions)*	1,322.021	864.315	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	2,186.336
Less PY Advance Procurement *($ in Millions)*	584.753	239.788	-	-	-	-	-	-	-	-	-	824.541
Net Procurement (P-1) *($ in Millions)*	737.268	624.527	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	1,361.795
Plus CY Advance Procurement *($ in Millions)*	824.541	-	-	-	-	-	-	-	-	-	-	824.541
Total Obligation Authority *($ in Millions)*	**1,561.809**	**624.527**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**-**	**2,186.336**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	-	14.810	9.803	4.937	-	4.937	-	-	-	-	-	29.550
Total *($ in Millions)*	**1,561.809**	**639.337**	**9.803**	**4.937**	**-**	**4.937**	**-**	**-**	**-**	**-**	**-**	**2,215.886**
Gross/Weapon System Unit Cost *($ in Millions)*	1,322.021	864.315	-	-	-	-	-	-	-	-	-	1,093.168

Description:

(1) The details of this program are classified CONFIDENTIAL and are reported annually to Congress in the classified budget justification books.

Characteristics:

	MTS-701	MTS-711
Length Overall	433 ft	433 ft
Beam	33 ft	33 ft
Displacement	7,500 LT	7,500 LT
Draft	27 ft	27 ft

Production Status:	MTS- 701 (1)	MTS- 711
Contract Award Date	Feb 2015	May 2017
Months to Completion		
a) Award to Delivery	45 months	42 months
b) Construction Start to Delivery	45 months	42 months
Delivery Date	Nov 2018	Nov 2020
Completion Of Fitting Out	Nov 2018	Nov 2020
Obligation Work Limit Date	Oct 2019	Oct 2021

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	N/A	N/A		
Issue Date for TLS	Apr 2008	Jan 2015		
Preliminary Design	Jan 2012	N/A		
Contract Design	Feb 2012	N/A		

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy			Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost		P-1 Line Item Number / Title: 5092 / Moored Training Ship	
ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A		Other Related Program Elements: N/A
Line Item MDAP/MAIS Code: N/A			

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Detail Design	Feb 2012	N/A		
Request for Proposals	N/A	N/A		
Design Agent	ELECTRIC BOAT			
Classification of Cost Estimate:				

Justification:
The details of this program are classified CONFIDENTIAL and are reported annually to Congress in the classified budget justification books.

Footnotes:
(1) The details of this program are CONFIDENTIAL and are reported annually to Congress in the classified budget justification books.

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy			**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1		**P-1 Line Item Number / Title:** 5092 / Moored Training Ship	

Cost Categories	FY 2015		FY 2017	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Design	1	482.400	1	46.449
Plans/Conversion		387.700		382.214
GFE		30.600		31.100
Basic Construction		421.321		404.552
Total Ship Estimate		**1,322.021**		**864.315**
Less Advance Procurement FY 2012		131.200		-
Less Advance Procurement FY 2013		283.453		-
Less Advance Procurement FY 2014		170.100		37.200
Less Advance Procurement FY 2015		-		64.388
Less Advance Procurement FY 2016		-		138.200
Net P-1 Funding		**737.268**		**624.527**

Exhibit P-27, Ship Production Schedule: PB 2019 Navy					Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1			P-1 Line Item Number / Title: 5092 / Moored Training Ship		
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
MTS- 701 (1)	EB/NNSY	2015	Feb 2015	Feb 2015	Nov 2018
MTS- 711	EB/NNSY	2017	May 2017	May 2017	Nov 2020

Footnotes:

(1) The details of this program are CONFIDENTIAL and are reported annually to Congress in the classified budget justification books.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5100 / LCU 1700

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	1	-	1	2	-	2	4	4	4	4	12	32
Gross/Weapon System Cost *($ in Millions)*	34.000	0.000	31.850	41.520	0.000	41.520	85.733	89.559	88.737	89.579	287.782	748.760
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	34.000	0.000	31.850	41.520	0.000	41.520	85.733	89.559	88.737	89.579	287.782	748.760
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**34.000**	**0.000**	**31.850**	**41.520**	**0.000**	**41.520**	**85.733**	**89.559**	**88.737**	**89.579**	**287.782**	**748.760**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Total *($ in Millions)*	**34.000**	**-**	**31.850**	**41.520**	**-**	**41.520**	**85.733**	**89.559**	**88.737**	**89.579**	**287.782**	**748.760**
Gross/Weapon System Unit Cost *($ in Millions)*	34.000	-	31.850	20.760	-	20.760	21.433	22.390	22.184	22.395	23.982	23.399

Description:

The FY 2019 funding request was reduced by $.217 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

The Landing Craft, Utility (LCU) 1700 program provides heavy lift capability to transport personnel, weapons, equipment, and cargo from the ship to shore and shore to shore across the range of military operations (ROMO). LCU 1700 will be able to conduct 24 hours/day operations for up to 10 days for continuous landing of troops, equipment, and supplies; provide support for missions requiring persistence such as Riverine sustainment, surveillance or port clearing; and execute missions to reinforce, reposition, and resupply forces over a wide operating area.

LCU 1700 provides the functional replacement for the LCU 1610 class of landing craft, all of which have significantly exceeded their 25 year service life, the average age is approaching 50 years old.

LCU 1700 requirement is for 32 craft.

Note:
Notional Characteristics based on Government Preliminary Design.
Production Status dates provided are based on a notional schedule.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5100 / LCU 1700	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Characteristics:	**LCU**
Length Overall	139 ft
Beam	31 ft
Displacement	428 Tons
Draft	7.3 ft

Production Status:	**LCU 1700**	**LCU 1701**	**LCU 1702**	**LCU 1703**
Contract Award Date	Feb 2018	Mar 2018	Jan 2019	Jan 2019
Months to Completion				
a) Award to Delivery	33 months	35 months	26 months	27 months
b) Construction Start to Delivery	21 months	24 months	23 months	21 months
Delivery Date	Nov 2020	Feb 2021	Mar 2021	Apr 2021
Completion Of Fitting Out	Dec 2020	Mar 2021	Apr 2021	May 2021
Obligation Work Limit Date	Nov 2021	Feb 2022	Mar 2022	Apr 2022

Design Schedule	**Start / Issue**	**Complete / Response**	**Reissue**	**Reissue Complete / Response**
Issue Date for TLR	N/A	N/A		
Issue Date for TLS	N/A	N/A		
Preliminary Design	Mar 2014	May 2015		
Contract Design	Jun 2015	Jun 2016		
Detail Design	Jan 2018	Jan 2019		
Request for Proposals	Feb 2017	May 2017		
Design Agent				

Classification of Cost Estimate:

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5100 / LCU 1700

Cost Categories	FY 2016		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Plan Costs	1	5.000	1	-	2	-
Basic Construction/Conversion		19.050		18.738		33.163
Change Orders		1.600		1.563		1.500
Electronics		3.890		4.800		3.768
Hull, Mechanical, and Electrical (HM&E)		2.360		3.461		1.589
Other Cost		2.100		3.288		1.500
Total Ship Estimate		**34.000**		**31.850**		**41.520**
Net P-1 Funding		**34.000**		**31.850**		**41.520**

Remarks:
FY 2016 and FY 2018 electronics funding includes non-recurring engineering costs.

Exhibit P-27, Ship Production Schedule: PB 2019 Navy			Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1			P-1 Line Item Number / Title: 5100 / LCU 1700		
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
LCU 1700	TBD	2016	Feb 2018	Feb 2019	Nov 2020
LCU 1701	TBD	2018	Mar 2018	Feb 2019	Feb 2021
LCU 1702	TBD	2019	Jan 2019	Apr 2019	Mar 2021
LCU 1703	TBD	2019	Jan 2019	Jul 2019	Apr 2021
LCU 1704	TBD	2020	Jan 2020	Jan 2020	Jun 2021
LCU 1705	TBD	2020	Jan 2020	Apr 2020	Jul 2021
LCU 1706	TBD	2020	Jan 2020	Jul 2020	Oct 2021
LCU 1707	TBD	2020	Jan 2020	Oct 2020	Jan 2022
LCU 1708	TBD	2021	Jan 2021	Jan 2021	Apr 2022
LCU 1709	TBD	2021	Jan 2021	Apr 2021	Jul 2022
LCU 1710	TBD	2021	Jan 2021	Jul 2021	Sep 2022
LCU 1711	TBD	2021	Jan 2021	Oct 2021	Nov 2022
LCU 1712	TBD	2022	Jan 2022	Jan 2022	Jan 2023
LCU 1713	TBD	2022	Jan 2022	Apr 2022	Apr 2023
LCU 1714	TBD	2022	Jan 2022	Jul 2022	Jul 2023
LCU 1715	TBD	2022	Jan 2022	Oct 2022	Oct 2023
LCU 1716	TBD	2023	Jan 2023	Jan 2023	Jan 2024
LCU 1717	TBD	2023	Jan 2023	Apr 2023	Apr 2024
LCU 1718	TBD	2023	Jan 2023	Jul 2023	Jul 2024
LCU 1719	TBD	2023	Jan 2023	Oct 2023	Oct 2024

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5110 / Outfitting

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Full Funding TOA - Outfitting *($ in Millions)*	595.286	170.049	121.650	224.836	249.053	218.177	158.515	183.828	671.900	2,593.294
Full Funding TOA - Post Delivery *($ in Millions)*	490.649	451.121	421.905	404.011	437.030	394.413	398.601	382.076	872.670	4,252.476
Full Funding TOA - First Destination *($ in Millions)*	28.683	4.988	5.148	5.191	5.301	5.396	5.499	5.612	5.581	71.399
Total Obligation Authority *($ in Millions)*	**1,114.618**	**626.158**	**548.703**	**634.038**	**691.384**	**617.986**	**562.615**	**571.516**	**1,550.151**	**6,917.169**

Description:

The FY 2019 funding request was reduced by $6.606 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

Outfitting funds are used to acquire on board repair parts, other secondary items, equipage, recreation items, precommissioning crew support and general use consumables furnished to the shipbuilder or the fitting-out activity to fill the ship's initial allowances as defined by the baseline coordinated shipboard allowance list (COSAL). The program also budgets for contractor-furnished spares, a lead-time away from delivery. The program ensures operational readiness of ships undergoing new construction, conversion, ship life extension program, and nuclear refueling. It ensures these ships receive their full allowances of spare parts and equipment which are vitally required to support the shipboard maintenance process; ensures ships are equipped with operating space items (tools, test equipment, damage control), personnel safety and survivability commodities for successful completion of builder sea trials; supports shipboard maintenance and thereby achieving the OPNAV-directed supply readiness goals for material on board ship at delivery. SCN funding for the initial fill of allowance list items are limited to those items on the COSAL and authorized requirements through the Obligation Work Limiting Date (OWLD). While most outfitting funds are executed prior to ships' completion of fitting out dates, some outfitting funding may be required in the fiscal year following the scheduled Delivery Date.

Post Delivery funding covers the fixing of government-responsible items which were believed to have been complete to standard and/or operable at delivery, as well as funding to conduct tests and trials after delivery.
It is essential to deliver to the Fleet complete ships, free from both contractor and government responsible deficiencies, capable of supporting the Navy's mission. The Post Shakedown Availability (PSA) is a shipyard availability assigned to commence after delivery and to be completed prior to the expiration of the SCN OWLD. It is during this time that acceptance and final contract trials deficiencies will be corrected. The purpose of the PSA is to correct new construction deficiencies found during the shakedown period; to correct contractor and government responsible deficiencies previously authorized; and accomplishment of other improvements or class items as authorized. Funding is used for corrections authorized by the ship's Program Manager as a result of builders' trials (pre-delivery), acceptance or underway trials, final contract trials, trial board items, and correction of production-related defects or deficiencies which develop during the post delivery period. Although the majority of post delivery funding occurs after ships' delivery dates, some funding is required prior to the delivery date in preparation for post delivery events.

First Destination Transportation (FDT) finances the movement of newly procured equipment and materials from the contractor's plant to the initial point of receipt by the Government.

Exhibit P-29, Outfitting: PB 2019 Navy | **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1

P-1 Line Item Number / Title: 5110 / Outfitting

Ship Class	Hull Number	Program Year	Contract Award	Start of Const.	Delivery Date	CFO	PSA Start	PSA Finish	OWL Date	Prior Years	FY 2017	FY 2018	FY 2019	To Complete	Total
CVN	78	2008	Sep 2008	Aug 2005	May 2017	Jul 2017	Apr 2018	Apr 2019	Jan 2020	145.818	-	-	-	-	145.818
CVN	79	2013	Jun 2015	Feb 2011	Sep 2024	Nov 2024	Mar 2023	Sep 2024	Oct 2025	-	-	-	17.623	153.004	170.627
CVN	80	2018	Dec 2018	Dec 2018	Sep 2027	Nov 2027	Apr 2028	Sep 2028	Oct 2028	-	-	-	-	172.568	172.568
									CVN Total	**145.818**	**-**	**-**	**17.623**	**325.572**	**489.013**
VIRGINIA	786	2011	Dec 2008	Mar 2011	Aug 2016	Aug 2016	Feb 2017	Aug 2017	Oct 2017	17.443	0.186	-	-	-	17.629
VIRGINIA	787	2011	Dec 2008	Sep 2011	May 2017	May 2017	Oct 2017	Apr 2018	Apr 2018	17.398	0.204	-	-	-	17.602
VIRGINIA	788	2012	Dec 2008	Mar 2012	Sep 2017	Sep 2017	Mar 2018	Aug 2018	Aug 2018	15.932	0.303	-	-	-	16.235
VIRGINIA	789	2012	Dec 2008	Sep 2012	Feb 2018	Feb 2018	Jun 2018	Dec 2018	Jan 2019	15.828	0.801	-	-	-	16.629
VIRGINIA	790	2013	Dec 2008	Mar 2013	Aug 2018	Aug 2018	Feb 2019	Jul 2019	Jul 2019	15.470	1.508	-	-	-	16.978
VIRGINIA	791	2013	Dec 2008	Sep 2013	Feb 2019	Feb 2019	Jun 2019	Sep 2019	Jan 2020	13.352	3.667	-	-	-	17.019
VIRGINIA	792	2014	Apr 2014	May 2014	Jun 2019	Jun 2019	Nov 2019	Apr 2020	May 2020	0.087	16.939	0.566	-	-	17.592
VIRGINIA	793	2014	Apr 2014	Sep 2014	Nov 2019	Nov 2019	Apr 2020	Jul 2020	Oct 2020	-	-	14.415	7.838	-	22.253
VIRGINIA	794	2015	Apr 2014	Apr 2015	May 2020	May 2020	Sep 2020	Dec 2020	Apr 2021	-	-	2.147	11.966	8.163	22.276
VIRGINIA	795	2015	Apr 2014	Sep 2015	Sep 2020	Sep 2020	Jan 2021	Apr 2021	Aug 2021	-	-	-	10.916	11.460	22.376
VIRGINIA	796	2016	Apr 2014	Mar 2016	Feb 2021	Feb 2021	Jun 2021	Sep 2021	Jan 2022	-	-	-	11.162	11.216	22.378
VIRGINIA	797	2016	Apr 2014	Sep 2016	Aug 2021	Aug 2021	Nov 2021	Feb 2022	Jul 2022	-	-	-	2.110	20.508	22.618
VIRGINIA	798	2017	Apr 2014	Mar 2017	Feb 2022	Feb 2022	Jun 2022	Sep 2022	Jan 2023	-	-	-	-	22.372	22.372
VIRGINIA	799	2017	Apr 2014	Sep 2017	Aug 2022	Aug 2022	Jan 2023	Apr 2023	Jul 2023	-	-	-	-	22.372	22.372
VIRGINIA	800	2018	Apr 2014	Mar 2018	Feb 2023	Feb 2023	Jun 2023	Sep 2023	Jan 2024	-	-	-	-	22.794	22.794
VIRGINIA	801	2018	Apr 2014	Sep 2018	Aug 2023	Aug 2023	Jan 2024	Apr 2024	Jul 2024	-	-	-	-	22.794	22.794
VIRGINIA	802	2019	Oct 2018	Mar 2019	Jul 2024	Jul 2024	Aug 2024	Feb 2025	Jun 2025	-	-	-	-	23.185	23.185
VIRGINIA	803	2019	Oct 2018	Sep 2019	Apr 2025	Apr 2025	May 2025	Nov 2025	Mar 2026	-	-	-	-	25.012	25.012
VIRGINIA	804	2020	Oct 2018	Mar 2020	Jun 2025	Jun 2025	Jul 2025	Jan 2026	May 2026	-	-	-	-	25.682	25.682
VIRGINIA	805	2020	Oct 2018	Sep 2020	Dec 2025	Dec 2025	Jan 2026	Jul 2026	Nov 2026	-	-	-	-	25.682	25.682
VIRGINIA	806	2021	Oct 2018	Mar 2021	Jun 2026	Jun 2026	Jul 2026	Jan 2027	May 2027	-	-	-	-	26.195	26.195
VIRGINIA	807	2021	Oct 2018	Sep 2021	Dec 2026	Dec 2026	Jan 2027	Jul 2027	Nov 2027	-	-	-	-	26.195	26.195
VIRGINIA	808	2022	Oct 2018	Mar 2022	Jun 2027	Jun 2027	Jul 2027	Jan 2028	May 2028	-	-	-	-	26.719	26.719
VIRGINIA	809	2022	Oct 2018	Sep 2022	Dec 2027	Dec 2027	Jan 2028	Jul 2028	Nov 2028	-	-	-	-	26.719	26.719
									VIRGINIA Total	**95.510**	**23.608**	**17.128**	**43.992**	**347.068**	**527.306**
CVN-RCOH	72	2012	Mar 2013	Mar 2013	May 2017	Jul 2017	May 2017	May 2018	Jun 2018	63.818	4.504	-	-	-	68.322
CVN-RCOH	73	2016	Aug 2017	Aug 2017	Aug 2021	Oct 2021	Aug 2021	Aug 2022	Sep 2022	-	-	6.486	20.048	40.965	67.499
CVN-RCOH	74	2021	Jan 2021	Jan 2021	Jan 2025	Mar 2025	Jan 2025	Jan 2026	Feb 2026	-	-	-	-	69.172	69.172
									CVN-RCOH Total	**63.818**	**4.504**	**6.486**	**20.048**	**110.137**	**204.993**
DDG 1000	1000	2007	Feb 2008	Feb 2009	Dec 2018	Jun 2019	Apr 2020	May 2020	May 2020	58.735	2.000	0.250	0.250	-	61.235
DDG 1000	1001	2007	Sep 2011	Mar 2010	Sep 2020	Oct 2020	Apr 2021	Jul 2021	Sep 2021	3.934	5.137	7.723	0.339	4.045	21.178
DDG 1000	1002	2009	Sep 2011	Apr 2012	Sep 2022	Oct 2022	Apr 2023	Jul 2023	Sep 2023	0.029	-	-	19.914	10.591	30.534
									DDG 1000 Total	**62.698**	**7.137**	**7.973**	**20.503**	**14.636**	**112.947**
DDG	113	2010	Jun 2011	Aug 2012	Dec 2016	Jun 2017	Jan 2018	Apr 2018	May 2018	20.087	1.073	-	-	-	21.160
DDG	115	2011	Sep 2011	Feb 2012	Feb 2017	Apr 2017	Feb 2018	Jun 2018	Jun 2018	12.909	6.699	0.377	-	-	19.985

Exhibit P-29, Outfitting: PB 2019 Navy | **Date:** February 2018

Appropriation / Budget Activity / Budget Sub Activity:
1611N / 05 / 1

P-1 Line Item Number / Title:
5110 / Outfitting

Ship Class	Hull Number	Program Year	Contract Award	Start of Const.	Delivery Date	CFO	PSA Start	PSA Finish	OWL Date	Prior Years	FY 2017	FY 2018	FY 2019	To Complete	Total
DDG	114	2011	Sep 2011	Sep 2013	Nov 2017	Mar 2018	Oct 2018	Dec 2018	Feb 2019	12.452	5.554	1.894	-	-	19.900
DDG	116	2012	Feb 2012	Feb 2013	Apr 2018	Aug 2018	Mar 2019	Jul 2019	Jul 2019	4.913	10.751	4.097	0.393	-	20.154
DDG	117	2013	Jun 2013	Sep 2014	Oct 2018	Feb 2019	Sep 2019	Dec 2019	Jan 2020	1.738	12.815	2.713	0.400	-	17.666
DDG	118	2013	Jun 2013	Aug 2015	Dec 2019	Mar 2020	Nov 2020	Feb 2021	Feb 2021	-	-	10.611	6.838	3.235	20.684
DDG	120	2013	Mar 2014	Sep 2016	Oct 2020	Feb 2021	Sep 2021	Dec 2021	Jan 2022	-	-	-	12.280	9.170	21.450
DDG	119	2014	Jun 2013	Jul 2015	May 2019	Sep 2019	May 2020	Aug 2020	Aug 2020	-	6.820	9.830	2.389	2.990	22.029
DDG	121	2015	Jun 2013	Apr 2016	May 2020	Sep 2020	Apr 2021	Aug 2021	Aug 2021	-	-	0.604	10.027	11.542	22.173
DDG	122	2015	Jun 2013	Sep 2017	Jul 2021	Nov 2021	Jun 2022	Sep 2022	Oct 2022	-	-	-	0.466	22.377	22.843
DDG	123	2016	Jun 2013	Jun 2018	Jul 2021	Nov 2021	Jul 2022	Oct 2022	Oct 2022	-	-	-	0.466	22.377	22.843
DDG	124	2016	Jun 2013	Aug 2018	Jun 2022	Oct 2022	Jun 2023	Sep 2023	Sep 2023	-	-	-	-	21.835	21.835
DDG	127	2016	Sep 2017	Aug 2018	Nov 2022	Feb 2023	Oct 2023	Jan 2024	Jan 2024	-	-	-	-	21.873	21.873
DDG	125	2017	Jun 2013	May 2018	Apr 2023	Aug 2023	Apr 2024	Jul 2024	Jul 2024	-	-	-	-	22.079	22.079
DDG	126	2017	Jun 2013	Apr 2019	Jun 2024	Oct 2024	May 2025	Sep 2025	Sep 2025	-	-	-	-	22.635	22.635
DDG	128	2018	Jun 2018	Jul 2019	Dec 2023	Apr 2024	Dec 2024	Mar 2025	Mar 2025	-	-	-	-	21.727	21.727
DDG	129	2018	Jun 2018	Jul 2019	Dec 2023	Apr 2024	Dec 2024	Mar 2025	Mar 2025	-	-	-	-	22.911	22.911
DDG	130	2019	Jun 2018	Jul 2020	Sep 2024	Jan 2025	Sep 2025	Dec 2025	Dec 2025	-	-	-	-	21.745	21.745
DDG	131	2019	Jun 2018	Jul 2020	Sep 2024	Jan 2025	Sep 2025	Dec 2025	Dec 2025	-	-	-	-	21.921	21.921
DDG	132	2019	Jun 2019	Jan 2021	Mar 2025	Jul 2025	Mar 2026	Jun 2026	Jun 2026	-	-	-	-	22.007	22.007
DDG	133	2020	Jun 2018	Jul 2021	Jul 2025	Nov 2025	Jul 2026	Oct 2026	Oct 2026	-	-	-	-	22.009	22.009
									DDG Total	**52.099**	**43.712**	**30.126**	**33.259**	**292.433**	**451.629**
FF	1	2020	Jul 2020	Jan 2022	Jan 2026	Jun 2026	Mar 2027	Apr 2027	May 2027	-	-	-	-	8.868	8.868
FF	2	2021	Mar 2021	May 2022	Feb 2026	Sep 2026	May 2027	Jul 2027	Aug 2027	-	-	-	-	10.200	10.200
FF	3	2022	Mar 2022	Nov 2022	Sep 2026	Jan 2027	Oct 2027	Dec 2027	Jan 2028	-	-	-	-	10.200	10.200
									FF Total	**-**	**-**	**-**	**-**	**29.268**	**29.268**
LCS	6	2010	Dec 2010	Aug 2011	Aug 2015	Feb 2017	Jun 2017	Aug 2018	Aug 2018	6.705	-	-	-	-	6.705
LCS	5	2010	Dec 2010	Aug 2011	Oct 2015	Nov 2016	Jan 2017	Feb 2018	Jun 2018	6.229	-	-	-	-	6.229
LCS	8	2011	Mar 2011	Jul 2012	Jun 2016	Sep 2016	May 2017	Jun 2018	Jun 2018	6.001	-	-	-	-	6.001
LCS	7	2011	Mar 2011	Apr 2012	Aug 2016	Oct 2016	May 2017	Apr 2018	Jun 2018	6.711	-	-	-	-	6.711
LCS	10	2012	Mar 2012	Mar 2013	Dec 2016	May 2017	Feb 2018	Apr 2018	Apr 2018	6.152	0.500	-	-	-	6.652
LCS	12	2012	Mar 2012	Sep 2013	Sep 2017	Nov 2017	Jun 2018	Oct 2018	Oct 2018	3.931	2.471	-	-	-	6.402
LCS	9	2012	Mar 2012	Jan 2013	Sep 2017	Dec 2017	Jul 2018	Nov 2018	Nov 2018	6.101	0.500	-	-	-	6.601
LCS	11	2012	Mar 2012	Aug 2013	Jun 2018	Nov 2018	Jun 2019	Nov 2019	Nov 2019	5.966	1.821	-	-	-	7.787
LCS	14	2013	Mar 2013	Feb 2014	Feb 2018	Jul 2018	Jan 2019	Jul 2019	Jul 2019	5.612	1.550	0.184	-	-	7.346
LCS	16	2013	Mar 2013	Sep 2014	Apr 2018	Jan 2019	Jun 2019	Nov 2019	Dec 2019	4.672	0.580	1.426	-	-	6.678
LCS	13	2013	Mar 2013	Feb 2014	Jul 2018	Mar 2019	Aug 2019	Jan 2020	Feb 2020	5.125	0.467	0.400	0.188	-	6.180
LCS	15	2013	Mar 2013	Dec 2014	Dec 2018	Aug 2019	Jan 2020	Jun 2020	Jul 2020	4.882	0.840	0.844	0.750	-	7.316
LCS	18	2014	Mar 2014	Mar 2015	Jul 2018	Mar 2019	Aug 2019	Jan 2020	Feb 2020	2.258	2.047	1.173	0.788	-	6.266
LCS	20	2014	Mar 2014	Feb 2016	Mar 2019	Nov 2019	Apr 2020	Oct 2020	Oct 2020	1.984	1.757	1.023	1.250	-	6.014
LCS	17	2014	Mar 2014	Aug 2015	Jun 2019	Feb 2020	Aug 2020	Jan 2021	Jan 2021	1.788	1.269	1.333	1.539	0.192	6.121

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Ship Class	Hull Number	Program Year	Contract Award	Start of Const.	Delivery Date	CFO	PSA Start	PSA Finish	OWL Date	Prior Years	FY 2017	FY 2018	FY 2019	To Complete	Total
LCS	19	2014	Mar 2014	Aug 2016	Dec 2019	Aug 2020	Jan 2021	Jun 2021	Jul 2021	1.411	0.663	1.212	2.196	0.764	6.246
LCS	22	2015	Mar 2015	Dec 2016	Aug 2019	May 2020	Oct 2020	Mar 2021	Apr 2021	-	-	3.682	2.002	0.764	6.448
LCS	24	2015	Mar 2015	Jul 2017	Apr 2020	Jan 2021	Jun 2021	Nov 2021	Dec 2021	-	-	1.553	1.365	2.704	5.622
LCS	21	2015	Mar 2015	Feb 2017	Jun 2020	Feb 2021	Jul 2021	Jan 2022	Jan 2022	-	1.800	1.813	2.004	0.948	6.565
LCS	23	2016	Nov 2015	Sep 2017	Nov 2020	Jul 2021	Dec 2021	May 2022	Jun 2022	-	1.800	1.364	2.294	2.112	7.570
LCS	26	2016	Mar 2016	Jan 2018	Nov 2020	Aug 2021	Jan 2022	Jun 2022	Jul 2022	-	-	-	3.118	3.595	6.713
LCS	25	2016	Mar 2016	Feb 2018	Jun 2021	Feb 2022	Jul 2022	Jan 2023	Jan 2023	-	-	-	2.690	4.010	6.700
LCS	28	2017	Jun 2017	Oct 2018	Jan 2022	Oct 2022	Mar 2023	Aug 2023	Sep 2023	-	-	-	1.499	5.962	7.461
LCS	27	2017	Oct 2017	Mar 2019	Oct 2022	Mar 2023	Aug 2023	Jan 2024	Feb 2024	-	-	-	-	6.722	6.722
LCS	30	2017	Oct 2017	May 2019	Oct 2022	Jul 2023	Dec 2023	May 2024	Jun 2024	-	-	-	-	7.622	7.622
LCS	29	2018	Jun 2018	Oct 2019	Jan 2023	Oct 2023	Mar 2024	Aug 2024	Sep 2024	-	-	-	-	7.552	7.552
LCS	31	2018	Jun 2018	Jun 2019	Jan 2023	Oct 2023	Mar 2024	Aug 2024	Sep 2024	-	-	-	-	7.614	7.614
LCS	32	2019	Mar 2019	Mar 2020	Oct 2023	Jul 2024	Dec 2024	May 2025	Jun 2025	-	-	-	-	7.639	7.639
									LCS Total	**75.528**	**18.065**	**16.007**	**21.683**	**58.200**	**189.483**
LPD	26	2009	Apr 2011	May 2011	May 2016	Mar 2017	Aug 2017	Feb 2018	Feb 2018	26.368	0.424	-	-	-	26.792
LPD	27	2012	Jul 2012	Aug 2012	Sep 2017	Apr 2018	Oct 2018	Mar 2019	Mar 2019	14.616	11.002	1.424	-	-	27.042
LPD	28	2016	Dec 2016	Dec 2016	Sep 2021	Feb 2022	Aug 2022	Jan 2023	Jan 2023	-	-	-	1.557	29.703	31.260
LPD	29	2017	Feb 2018	Apr 2018	Feb 2023	Aug 2023	Feb 2024	Jun 2024	Jul 2024	-	-	-	-	31.833	31.833
									LPD Total	**40.984**	**11.426**	**1.424**	**1.557**	**61.536**	**116.927**
ESB	4	2014	Dec 2014	Oct 2015	Mar 2018	Jun 2018	Jan 2019	May 2019	May 2019	4.000	18.030	-	-	-	22.030
ESB	5	2016	Dec 2016	Jan 2017	May 2019	Aug 2019	May 2020	Jul 2020	Jul 2020	-	-	5.844	12.445	7.398	25.687
									ESB Total	**4.000**	**18.030**	**5.844**	**12.445**	**7.398**	**47.717**
LHA	7	2011	May 2012	Jul 2013	Dec 2018	Oct 2019	Mar 2020	Jul 2020	Sep 2020	16.628	15.731	10.829	8.330	-	51.518
LHA	8	2017	Jun 2017	Oct 2018	Jan 2024	Sep 2024	Mar 2025	Jun 2025	Aug 2025	-	-	-	-	28.646	28.646
									LHA Total	**16.628**	**15.731**	**10.829**	**8.330**	**28.646**	**80.164**
EPF	9	2012	Feb 2012	Nov 2015	Dec 2017	Mar 2018	Aug 2018	Oct 2018	Feb 2019	2.650	0.350	-	-	-	3.000
EPF	10	2013	Dec 2012	Jun 2016	Aug 2018	Nov 2018	Apr 2019	Jun 2019	Oct 2019	1.930	2.045	-	-	-	3.975
EPF	11	2015	Sep 2016	Jan 2017	Mar 2019	Jun 2019	Dec 2019	Feb 2020	May 2020	-	-	4.003	0.366	-	4.369
EPF	12	2016	Sep 2016	Sep 2017	Nov 2019	Feb 2020	Aug 2020	Oct 2020	Jan 2021	-	-	0.300	4.439	-	4.739
									EPF Total	**4.580**	**2.395**	**4.303**	**4.805**	**-**	**16.083**
T-AO	205	2016	Jun 2016	Sep 2018	Nov 2020	Feb 2021	Jun 2021	Sep 2021	Jan 2022	-	-	0.024	17.712	3.932	21.668
T-AO	206	2018	Mar 2018	Apr 2019	Apr 2021	Jul 2021	Nov 2021	Feb 2022	Jun 2022	-	-	-	-	19.076	19.076
T-AO	207	2019	Jan 2019	Oct 2019	Sep 2021	Dec 2021	Apr 2022	Jul 2022	Nov 2022	-	-	-	-	19.087	19.087
T-AO	208	2019	Jan 2019	Mar 2020	Feb 2022	May 2022	Sep 2022	Dec 2022	Apr 2023	-	-	-	-	19.291	19.291
T-AO	209	2020	Jan 2020	Sep 2020	Aug 2022	Nov 2022	Mar 2023	Jun 2023	Oct 2023	-	-	-	-	19.446	19.446
T-AO	210	2021	Jan 2021	Mar 2021	Feb 2023	May 2023	Sep 2023	Dec 2023	Apr 2024	-	-	-	-	19.900	19.900
T-AO	211	2021	Jan 2021	Mar 2022	Feb 2024	May 2024	Sep 2024	Dec 2024	Apr 2025	-	-	-	-	20.570	20.570
									T-AO Total	**-**	**-**	**0.024**	**17.712**	**121.302**	**139.038**
T-ATS(X)	1601	2016	Feb 2018	Dec 2018	Aug 2020	Sep 2020	Jan 2021	Jan 2021	Aug 2021	-	-	-	2.702	1.508	4.210

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Ship Class	Hull Number	Program Year	Contract Award	Start of Const.	Delivery Date	CFO	PSA Start	PSA Finish	OWL Date	Prior Years	FY 2017	FY 2018	FY 2019	To Complete	Total
T-ATS(X)	1801	2018	May 2018	Apr 2019	Dec 2020	Jan 2021	Aug 2021	Aug 2021	Dec 2021	-	-	-	2.196	1.886	4.082
T-ATS(X)	1901	2019	Feb 2019	Aug 2019	Apr 2021	May 2021	Dec 2021	Dec 2021	Apr 2022	-	-	-	-	4.018	4.018
T-ATS(X)	2001	2020	Feb 2020	Aug 2020	Apr 2022	May 2022	Dec 2022	Dec 2022	Apr 2023	-	-	-	-	4.320	4.320
									T-ATS(X) Total	**-**	**-**	**-**	**4.898**	**11.732**	**16.630**
MTS	701	2015	Feb 2015	Feb 2015	Nov 2018	Nov 2018			Oct 2019	-	14.810	-	-	-	14.810
MTS	711	2017	May 2017	May 2017	Nov 2020	Nov 2020			Oct 2021	-	-	9.803	4.937	-	14.740
									MTS Total	**-**	**14.810**	**9.803**	**4.937**	**-**	**29.550**
LCAC	101	2015	Dec 2012	Mar 2015	Aug 2018	May 2019	May 2019	Jul 2019	Apr 2020	0.300	-	-	-	-	0.300
LCAC	102	2015	Mar 2015	Sep 2016	Apr 2019	Sep 2019	Sep 2019	Nov 2019	Aug 2020	-	-	0.717	-	-	0.717
LCAC	103	2015	Mar 2015	Nov 2016	Jun 2019	Sep 2019	Mar 2020	Jul 2020	Aug 2020	-	-	0.657	0.060	-	0.717
LCAC	104	2016	Mar 2016	Mar 2017	Jun 2019	Apr 2020	Sep 2020	Dec 2020	Mar 2021	-	-	-	0.717	-	0.717
LCAC	105	2016	Mar 2016	May 2017	Nov 2019	Apr 2020	Oct 2020	Jan 2021	Mar 2021	-	-	-	0.717	-	0.717
LCAC	106	2016	Mar 2016	Aug 2017	Feb 2020	Apr 2020	Nov 2020	Feb 2021	Mar 2021	-	-	-	0.731	-	0.731
LCAC	107	2016	Mar 2016	Oct 2017	May 2020	Nov 2020	Apr 2021	Jul 2021	Oct 2021	-	-	-	0.731	-	0.731
LCAC	108	2016	Mar 2016	Nov 2017	Jul 2020	Nov 2020	May 2021	Aug 2021	Oct 2021	-	-	-	0.331	0.400	0.731
LCAC	109	2017	Mar 2018	Mar 2018	Aug 2020	Nov 2020	Jun 2021	Sep 2021	Oct 2021	-	-	-	-	0.731	0.731
LCAC	110	2017	Mar 2018	Apr 2018	Oct 2020	Mar 2021	Jul 2021	Nov 2021	Feb 2022	-	-	-	-	0.731	0.731
LCAC	111	2018	Mar 2018	May 2018	Nov 2020	Mar 2021	Aug 2021	Dec 2021	Feb 2022	-	-	-	-	0.744	0.744
LCAC	112	2018	Mar 2018	Jul 2018	Dec 2020	Mar 2021	Sep 2021	Jan 2022	Feb 2022	-	-	-	-	0.744	0.744
LCAC	113	2018	Mar 2018	Aug 2018	Feb 2021	Aug 2021	Jan 2022	Apr 2022	Jul 2022	-	-	-	-	0.744	0.744
LCAC	114	2019	Mar 2019	May 2019	Mar 2021	Aug 2021	Feb 2022	May 2022	Jul 2022	-	-	-	-	1.201	1.201
LCAC	115	2019	Mar 2019	Jul 2019	May 2021	Aug 2021	Mar 2022	Jun 2022	Jul 2022	-	-	-	-	1.201	1.201
LCAC	116	2019	Mar 2019	Aug 2019	Jul 2021	Jan 2022	Jun 2022	Sep 2022	Dec 2022	-	-	-	-	1.201	1.201
LCAC	117	2019	Mar 2019	Oct 2019	Sep 2021	Jan 2022	Jul 2022	Oct 2022	Dec 2022	-	-	-	-	1.201	1.201
LCAC	118	2019	Mar 2019	Nov 2019	Nov 2021	Jan 2022	Aug 2022	Nov 2022	Dec 2022	-	-	-	-	1.201	1.201
LCAC	119	2020	Mar 2020	May 2020	Dec 2021	May 2022	Oct 2022	Jan 2023	Apr 2023	-	-	-	-	1.201	1.201
LCAC	120	2020	Mar 2020	Jul 2020	Jan 2022	May 2022	Nov 2022	Feb 2023	Apr 2023	-	-	-	-	1.861	1.861
LCAC	121	2020	Mar 2020	Aug 2020	Mar 2022	May 2022	Dec 2022	Mar 2023	Apr 2023	-	-	-	-	1.861	1.861
LCAC	122	2020	Mar 2020	Oct 2020	Apr 2022	Oct 2022	Mar 2023	Jun 2023	Sep 2023	-	-	-	-	1.861	1.861
LCAC	123	2020	Mar 2020	Nov 2020	Jun 2022	Oct 2022	Apr 2023	Jul 2023	Sep 2023	-	-	-	-	1.861	1.861
LCAC	124	2020	Mar 2020	Jan 2021	Jul 2022	Oct 2022	May 2023	Aug 2023	Sep 2023	-	-	-	-	1.861	1.861
									LCAC Total	**0.300**	**-**	**1.374**	**3.287**	**20.605**	**25.566**
LCAC SLEP	84	2015	Sep 2015	Dec 2015	Mar 2017	Apr 2017	Jul 2017	Jul 2017	Mar 2018	0.396	0.013	-	-	-	0.409
LCAC SLEP	58	2015	Sep 2015	Dec 2015	Apr 2017	May 2017	Jun 2017	Jun 2017	Apr 2018	0.396	0.013	-	-	-	0.409
LCAC SLEP	64	2016	Mar 2016	Jun 2016	Sep 2017	Oct 2017	Nov 2017	Nov 2017	Sep 2018	-	0.234	-	-	-	0.234
LCAC SLEP	85	2016	Mar 2016	Jun 2016	Oct 2017	Nov 2017	Nov 2017	Dec 2017	Oct 2018	-	0.234	-	-	-	0.234
LCAC SLEP	65	2016	Mar 2016	Oct 2016	Feb 2018	Mar 2018	Apr 2018	Apr 2018	Feb 2019	-	0.156	0.078	-	-	0.234
LCAC SLEP	76	2016	Mar 2016	Feb 2017	May 2018	Jun 2018	Jul 2018	Jul 2018	May 2019	-	0.210	0.028	-	-	0.238
LCAC SLEP	86	2017	Sep 2018	Dec 2018	Mar 2020	Apr 2020	May 2020	May 2020	Mar 2021	-	-	-	-	0.245	0.245

Exhibit P-29, Outfitting: PB 2019 Navy											**Date:** February 2018					
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Ship Class	**Hull Number**	**Program Year**	**Contract Award**	**Start of Const.**	**Delivery Date**	**CFO**	**PSA Start**	**PSA Finish**	**OWL Date**	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019**	**To Complete**	**Total**
LCAC SLEP	87	2017	Sep 2018	May 2019	Aug 2020	Sep 2020	Oct 2020	Oct 2020	Aug 2021	-	-	-	-	0.245	0.245
LCAC SLEP	77	2017	Sep 2018	Oct 2019	Jan 2021	Feb 2021	Mar 2021	Mar 2021	Jan 2022	-	-	-	-	0.245	0.245
LCAC SLEP	50	2019	Jun 2019	Jan 2020	Apr 2021	May 2021	Jun 2021	Jun 2021	Apr 2022	-	-	-	-	0.245	0.245
									LCAC SLEP Total	**0.792**	**0.860**	**0.106**	**-**	**0.980**	**2.738**
YP SLEP	694	2016	Oct 2017	Nov 2017	Apr 2018	Jul 2018			Jun 2019	-	0.047	-	-	-	0.047
YP SLEP	689	2016	Feb 2018	May 2018	Oct 2018	Jan 2019			Dec 2019	-	0.046	-	-	-	0.046
YP SLEP	692	2016	Feb 2018	May 2018	Oct 2018	Jan 2019			Dec 2020	-	0.046	-	-	-	0.046
YP SLEP	686	2016	Jul 2018	Oct 2018	Mar 2019	Jun 2019			May 2020	0.049	-	-	-	-	0.049
YP SLEP	690	2017	Aug 2018	Nov 2018	Apr 2019	Jul 2019			Jun 2020	-	0.047	-	-	-	0.047
YP SLEP	698	2017	Aug 2018	Nov 2018	Apr 2019	Jul 2019			Jun 2020	-	0.047	-	-	-	0.047
YP SLEP	691	2017	Jan 2019	Apr 2019	Sep 2019	Dec 2019			Nov 2020	-	-	-	-	0.049	0.049
YP SLEP	683	2017	Feb 2019	May 2019	Oct 2019	Jan 2020			Dec 2020	-	0.047	-	-	-	0.047
YP SLEP	684	2017	Feb 2019	May 2019	Oct 2019	Jan 2020			Dec 2020	-	-	-	-	0.048	0.048
YP SLEP	700	2017	Jul 2019	Oct 2019	Mar 2020	Jun 2020			May 2021	-	-	-	-	0.048	0.048
									YP SLEP Total	**0.049**	**0.280**	**-**	**-**	**0.145**	**0.474**
PUBS	0	2010								32.482	9.491	10.223	9.757	51.815	113.768
									PUBS Total	**32.482**	**9.491**	**10.223**	**9.757**	**51.815**	**113.768**
									Full Funding TOA - Outfitting Total	**595.286**	**170.049**	**121.650**	**224.836**	**1,481.473**	**2,593.294**

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Ship Class	Hull Number	Program Year	Contract Award	Start of Const.	Delivery Date	CFO	PSA Start	PSA Finish	OWL Date	Prior Years	FY 2017	FY 2018	FY 2019	To Complete	Total
CVN	78	2008	Sep 2008	Aug 2005	May 2017	Jul 2017	Apr 2018	Apr 2019	Jan 2020	68.303	2.341	26.213	33.900	-	130.757
CVN	79	2013	Jun 2015	Feb 2011	Sep 2024	Nov 2024	Mar 2023	Sep 2024	Oct 2025	-	-	-	-	122.183	122.183
CVN	80	2018	Dec 2018	Dec 2018	Sep 2027	Nov 2027	Apr 2028	Sep 2028	Oct 2028	-	-	-	-	107.868	107.868
									CVN Total	**68.303**	**2.341**	**26.213**	**33.900**	**230.051**	**360.808**
VIRGINIA	786	2011	Dec 2008	Mar 2011	Aug 2016	Aug 2016	Feb 2017	Aug 2017	Oct 2017	25.880	22.000	-	-	-	47.880
VIRGINIA	787	2011	Dec 2008	Sep 2011	May 2017	May 2017	Oct 2017	Apr 2018	Apr 2018	8.523	37.428	-	-	-	45.951
VIRGINIA	788	2012	Dec 2008	Mar 2012	Sep 2017	Sep 2017	Mar 2018	Aug 2018	Aug 2018	2.643	36.924	7.648	-	-	47.215
VIRGINIA	789	2012	Dec 2008	Sep 2012	Feb 2018	Feb 2018	Jun 2018	Dec 2018	Jan 2019	-	11.372	35.758	-	-	47.130
VIRGINIA	790	2013	Dec 2008	Mar 2013	Aug 2018	Aug 2018	Feb 2019	Jul 2019	Jul 2019	-	3.188	45.368	-	-	48.556
VIRGINIA	791	2013	Dec 2008	Sep 2013	Feb 2019	Feb 2019	Jun 2019	Sep 2019	Jan 2020	-	-	12.839	36.179	-	49.018
VIRGINIA	792	2014	Apr 2014	May 2014	Jun 2019	Jun 2019	Nov 2019	Apr 2020	May 2020	-	-	-	33.302	17.859	51.161
VIRGINIA	793	2014	Apr 2014	Sep 2014	Nov 2019	Nov 2019	Apr 2020	Jul 2020	Oct 2020	-	-	-	8.272	43.285	51.557
VIRGINIA	794	2015	Apr 2014	Apr 2015	May 2020	May 2020	Sep 2020	Dec 2020	Apr 2021	-	-	-	-	52.662	52.662
VIRGINIA	795	2015	Apr 2014	Sep 2015	Sep 2020	Sep 2020	Jan 2021	Apr 2021	Aug 2021	-	-	-	-	52.693	52.693
VIRGINIA	796	2016	Apr 2014	Mar 2016	Feb 2021	Feb 2021	Jun 2021	Sep 2021	Jan 2022	-	-	-	-	52.804	52.804
VIRGINIA	797	2016	Apr 2014	Sep 2016	Aug 2021	Aug 2021	Nov 2021	Feb 2022	Jul 2022	-	-	-	-	54.475	54.475
VIRGINIA	798	2017	Apr 2014	Mar 2017	Feb 2022	Feb 2022	Jun 2022	Sep 2022	Jan 2023	-	-	-	-	55.785	55.785
VIRGINIA	799	2017	Apr 2014	Sep 2017	Aug 2022	Aug 2022	Jan 2023	Apr 2023	Jul 2023	-	-	-	-	56.785	56.785
VIRGINIA	800	2018	Apr 2014	Mar 2018	Feb 2023	Feb 2023	Jun 2023	Sep 2023	Jan 2024	-	-	-	-	57.921	57.921
VIRGINIA	801	2018	Apr 2014	Sep 2018	Aug 2023	Aug 2023	Jan 2024	Apr 2024	Jul 2024	-	-	-	-	55.969	55.969
									VIRGINIA Total	**37.046**	**110.912**	**101.613**	**77.753**	**500.238**	**827.562**
CVN-RCOH	72	2012	Mar 2013	Mar 2013	May 2017	Jul 2017	May 2017	May 2018	Jun 2018	2.845	29.912	-	-	-	32.757
CVN-RCOH	73	2016	Aug 2017	Aug 2017	Aug 2021	Oct 2021	Aug 2021	Aug 2022	Sep 2022	-	-	-	-	38.596	38.596
CVN-RCOH	74	2021	Jan 2021	Jan 2021	Jan 2025	Mar 2025	Jan 2025	Jan 2026	Feb 2026	-	-	-	-	44.404	44.404
									CVN-RCOH Total	**2.845**	**29.912**	**-**	**-**	**83.000**	**115.757**
DDG 1000	1000	2007	Feb 2008	Feb 2009	Dec 2018	Jun 2019	Apr 2020	May 2020	May 2020	104.655	29.973	14.418	8.969	12.521	170.536
DDG 1000	1001	2007	Sep 2011	Mar 2010	Sep 2020	Oct 2020	Apr 2021	Jul 2021	Sep 2021	4.049	0.949	21.135	34.101	79.490	139.724
DDG 1000	1002	2009	Sep 2011	Apr 2012	Sep 2022	Oct 2022	Apr 2023	Jul 2023	Sep 2023	1.200	-	-	13.530	146.007	160.737
									DDG 1000 Total	**109.904**	**30.922**	**35.553**	**56.600**	**238.018**	**470.997**
DDG	113	2010	Jun 2011	Aug 2012	Dec 2016	Jun 2017	Jan 2018	Apr 2018	May 2018	7.049	28.177	-	-	-	35.226
DDG	115	2011	Sep 2011	Feb 2012	Feb 2017	Apr 2017	Feb 2018	Jun 2018	Jun 2018	12.581	22.457	-	-	-	35.038
DDG	114	2011	Sep 2011	Sep 2013	Nov 2017	Mar 2018	Oct 2018	Dec 2018	Feb 2019	-	19.746	17.840	-	-	37.586
DDG	116	2012	Feb 2012	Feb 2013	Apr 2018	Aug 2018	Mar 2019	Jul 2019	Jul 2019	-	-	25.683	-	-	25.683
DDG	117	2013	Jun 2013	Sep 2014	Oct 2018	Feb 2019	Sep 2019	Dec 2019	Jan 2020	-	-	11.148	25.203	-	36.351
DDG	118	2013	Jun 2013	Aug 2015	Dec 2019	Mar 2020	Nov 2020	Feb 2021	Feb 2021	-	-	-	6.073	30.784	36.857
DDG	120	2013	Mar 2014	Sep 2016	Oct 2020	Feb 2021	Sep 2021	Dec 2021	Jan 2022	-	-	-	-	36.081	36.081
DDG	119	2014	Jun 2013	Jul 2015	May 2019	Sep 2019	May 2020	Aug 2020	Aug 2020	-	-	-	8.490	27.648	36.138
DDG	121	2015	Jun 2013	Apr 2016	May 2020	Sep 2020	Apr 2021	Aug 2021	Aug 2021	-	-	-	-	36.936	36.936
DDG	122	2015	Jun 2013	Sep 2017	Jul 2021	Nov 2021	Jun 2022	Sep 2022	Oct 2022	-	-	-	-	35.905	35.905

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Ship Class	Hull Number	Program Year	Contract Award	Start of Const.	Delivery Date	CFO	PSA Start	PSA Finish	OWL Date	Prior Years	FY 2017	FY 2018	FY 2019	To Complete	Total
DDG	123	2016	Jun 2013	Jun 2018	Jul 2021	Nov 2021	Jul 2022	Oct 2022	Oct 2022	-	-	-	-	35.847	35.847
DDG	124	2016	Jun 2013	Aug 2018	Jun 2022	Oct 2022	Jun 2023	Sep 2023	Sep 2023	-	-	-	-	35.846	35.846
DDG	127	2016	Sep 2017	Aug 2018	Nov 2022	Feb 2023	Oct 2023	Jan 2024	Jan 2024	-	-	-	-	36.937	36.937
DDG	125	2017	Jun 2013	May 2018	Apr 2023	Aug 2023	Apr 2024	Jul 2024	Jul 2024	-	-	-	-	36.714	36.714
DDG	126	2017	Jun 2013	Apr 2019	Jun 2024	Oct 2024	May 2025	Sep 2025	Sep 2025	-	-	-	-	36.016	36.016
DDG	128	2018	Jun 2018	Jul 2019	Dec 2023	Apr 2024	Dec 2024	Mar 2025	Mar 2025	-	-	-	-	36.652	36.652
DDG	129	2018	Jun 2018	Jul 2019	Dec 2023	Apr 2024	Dec 2024	Mar 2025	Mar 2025	-	-	-	-	36.647	36.647
DDG	130	2019	Jun 2018	Jul 2020	Sep 2024	Jan 2025	Sep 2025	Dec 2025	Dec 2025	-	-	-	-	36.752	36.752
									DDG Total	**19.630**	**70.380**	**54.671**	**39.766**	**458.765**	**643.212**
LCS	6	2010	Dec 2010	Aug 2011	Aug 2015	Feb 2017	Jun 2017	Aug 2018	Aug 2018	54.251	15.515	3.328	-	-	73.094
LCS	5	2010	Dec 2010	Aug 2011	Oct 2015	Nov 2016	Jan 2017	Feb 2018	Jun 2018	74.401	12.809	-	-	-	87.210
LCS	8	2011	Mar 2011	Jul 2012	Jun 2016	Sep 2016	May 2017	Jun 2018	Jun 2018	36.885	5.771	2.871	-	-	45.527
LCS	7	2011	Mar 2011	Apr 2012	Aug 2016	Oct 2016	May 2017	Apr 2018	Jun 2018	35.419	5.873	3.490	-	-	44.782
LCS	10	2012	Mar 2012	Mar 2013	Dec 2016	May 2017	Feb 2018	Apr 2018	Apr 2018	16.079	16.226	13.613	-	-	45.918
LCS	12	2012	Mar 2012	Sep 2013	Sep 2017	Nov 2017	Jun 2018	Oct 2018	Oct 2018	0.307	29.215	15.758	-	-	45.280
LCS	9	2012	Mar 2012	Jan 2013	Sep 2017	Dec 2017	Jul 2018	Nov 2018	Nov 2018	8.863	21.808	13.927	-	-	44.598
LCS	11	2012	Mar 2012	Aug 2013	Jun 2018	Nov 2018	Jun 2019	Nov 2019	Nov 2019	0.393	26.792	11.360	5.585	-	44.130
LCS	14	2013	Mar 2013	Feb 2014	Feb 2018	Jul 2018	Jan 2019	Jul 2019	Jul 2019	-	5.129	30.752	7.414	-	43.295
LCS	16	2013	Mar 2013	Sep 2014	Apr 2018	Jan 2019	Jun 2019	Nov 2019	Dec 2019	-	0.100	23.797	19.376	-	43.273
LCS	13	2013	Mar 2013	Feb 2014	Jul 2018	Mar 2019	Aug 2019	Jan 2020	Feb 2020	-	0.200	14.981	26.832	1.117	43.130
LCS	15	2013	Mar 2013	Dec 2014	Dec 2018	Aug 2019	Jan 2020	Jun 2020	Jul 2020	-	-	5.867	34.103	4.538	44.508
LCS	18	2014	Mar 2014	Mar 2015	Jul 2018	Mar 2019	Aug 2019	Jan 2020	Feb 2020	-	-	13.980	22.343	6.916	43.239
LCS	20	2014	Mar 2014	Feb 2016	Mar 2019	Nov 2019	Apr 2020	Oct 2020	Oct 2020	-	-	-	13.724	27.245	40.969
LCS	17	2014	Mar 2014	Aug 2015	Jun 2019	Feb 2020	Aug 2020	Jan 2021	Jan 2021	-	-	-	9.711	35.213	44.924
LCS	19	2014	Mar 2014	Aug 2016	Dec 2019	Aug 2020	Jan 2021	Jun 2021	Jul 2021	-	-	-	2.503	38.468	40.971
LCS	22	2015	Mar 2015	Dec 2016	Aug 2019	May 2020	Oct 2020	Mar 2021	Apr 2021	-	-	-	5.991	34.716	40.707
LCS	24	2015	Mar 2015	Jul 2017	Apr 2020	Jan 2021	Jun 2021	Nov 2021	Dec 2021	-	-	-	-	40.671	40.671
LCS	21	2015	Mar 2015	Feb 2017	Jun 2020	Feb 2021	Jul 2021	Jan 2022	Jan 2022	-	-	-	-	40.353	40.353
LCS	23	2016	Nov 2015	Sep 2017	Nov 2020	Jul 2021	Dec 2021	May 2022	Jun 2022	-	-	-	-	40.752	40.752
LCS	26	2016	Mar 2016	Jan 2018	Nov 2020	Aug 2021	Jan 2022	Jun 2022	Jul 2022	-	-	-	-	40.257	40.257
LCS	25	2016	Mar 2016	Feb 2018	Jun 2021	Feb 2022	Jul 2022	Jan 2023	Jan 2023	-	-	-	-	40.426	40.426
LCS	28	2017	Jun 2017	Oct 2018	Jan 2022	Oct 2022	Mar 2023	Aug 2023	Sep 2023	-	-	-	-	45.874	45.874
LCS	27	2017	Oct 2017	Mar 2019	Oct 2022	Mar 2023	Aug 2023	Jan 2024	Feb 2024	-	-	-	-	45.874	45.874
LCS	30	2017	Oct 2017	May 2019	Oct 2022	Jul 2023	Dec 2023	May 2024	Jun 2024	-	-	-	-	45.845	45.845
LCS	29	2018	Jun 2018	Oct 2019	Jan 2023	Oct 2023	Mar 2024	Aug 2024	Sep 2024	-	-	-	-	45.844	45.844
LCS	31	2018	Jun 2018	Jun 2019	Jan 2023	Oct 2023	Mar 2024	Aug 2024	Sep 2024	-	-	-	-	45.244	45.244
LCS	32	2019	Mar 2019	Mar 2020	Oct 2023	Jul 2024	Dec 2024	May 2025	Jun 2025	-	-	-	-	45.843	45.843
									LCS Total	**226.598**	**139.438**	**153.724**	**147.582**	**625.196**	**1,292.538**
LPD	26	2009	Apr 2011	May 2011	May 2016	Mar 2017	Aug 2017	Feb 2018	Feb 2018	23.852	34.275	-	-	-	58.127

Exhibit P-30, Delivery: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5110 / Outfitting

Ship Class	Hull Number	Program Year	Contract Award	Start of Const.	Delivery Date	CFO	PSA Start	PSA Finish	OWL Date	Prior Years	FY 2017	FY 2018	FY 2019	To Complete	Total
LPD	27	2012	Jul 2012	Aug 2012	Sep 2017	Apr 2018	Oct 2018	Mar 2019	Mar 2019	2.200	21.033	28.720	1.988	-	53.941
LPD	28	2016	Dec 2016	Dec 2016	Sep 2021	Feb 2022	Aug 2022	Jan 2023	Jan 2023	-	-	-	-	67.700	67.700
LPD	29	2017	Feb 2018	Apr 2018	Feb 2023	Aug 2023	Feb 2024	Jun 2024	Jul 2024	-	-	-	-	62.300	62.300
									LPD Total	**26.052**	**55.308**	**28.720**	**1.988**	**130.000**	**242.068**
ESB	4	2014	Dec 2014	Oct 2015	Mar 2018	Jun 2018	Jan 2019	May 2019	May 2019	-	-	7.380	7.787	-	15.167
ESB	5	2016	Dec 2016	Jan 2017	May 2019	Aug 2019	May 2020	Jul 2020	Jul 2020	-	-	-	6.959	9.327	16.286
									ESB Total	**-**	**-**	**7.380**	**14.746**	**9.327**	**31.453**
LHA	7	2011	May 2012	Jul 2013	Dec 2018	Oct 2019	Mar 2020	Jul 2020	Sep 2020	-	-	4.140	24.239	21.029	49.408
LHA	8	2017	Jun 2017	Oct 2018	Jan 2024	Sep 2024	Mar 2025	Jun 2025	Aug 2025	-	-	-	-	55.221	55.221
									LHA Total	**-**	**-**	**4.140**	**24.239**	**76.250**	**104.629**
EPF	8	2012	Feb 2012	Apr 2015	Apr 2017	Jul 2017	Jan 2018	Mar 2018	Jun 2018	-	5.545	-	-	-	5.545
EPF	9	2012	Feb 2012	Nov 2015	Dec 2017	Mar 2018	Aug 2018	Oct 2018	Feb 2019	-	4.326	0.979	-	-	5.305
EPF	10	2013	Dec 2012	Jun 2016	Aug 2018	Nov 2018	Apr 2019	Jun 2019	Oct 2019	-	0.853	4.178	-	-	5.031
EPF	11	2015	Sep 2016	Jan 2017	Mar 2019	Jun 2019	Dec 2019	Feb 2020	May 2020	-	-	0.527	3.611	-	4.138
EPF	12	2016	Sep 2016	Sep 2017	Nov 2019	Feb 2020	Aug 2020	Oct 2020	Jan 2021	-	-	-	0.602	2.407	3.009
									EPF Total	**-**	**10.724**	**5.684**	**4.213**	**2.407**	**23.028**
T-AO	205	2016	Jun 2016	Sep 2018	Nov 2020	Feb 2021	Jun 2021	Sep 2021	Jan 2022	-	-	-	-	18.715	18.715
T-AO	206	2018	Mar 2018	Apr 2019	Apr 2021	Jul 2021	Nov 2021	Feb 2022	Jun 2022	-	-	-	-	17.326	17.326
T-AO	207	2019	Jan 2019	Oct 2019	Sep 2021	Dec 2021	Apr 2022	Jul 2022	Nov 2022	-	-	-	-	12.398	12.398
T-AO	208	2019	Jan 2019	Mar 2020	Feb 2022	May 2022	Sep 2022	Dec 2022	Apr 2023	-	-	-	-	12.491	12.491
T-AO	209	2020	Jan 2020	Sep 2020	Aug 2022	Nov 2022	Mar 2023	Jun 2023	Oct 2023	-	-	-	-	12.682	12.682
T-AO	210	2021	Jan 2021	Mar 2021	Feb 2023	May 2023	Sep 2023	Dec 2023	Apr 2024	-	-	-	-	12.923	12.923
									T-AO Total	**-**	**-**	**-**	**-**	**86.535**	**86.535**
T-ATS(X)	1601	2016	Feb 2018	Dec 2018	Aug 2020	Sep 2020	Jan 2021	Jan 2021	Aug 2021	-	-	-	-	4.286	4.286
T-ATS(X)	1801	2018	May 2018	Apr 2019	Dec 2020	Jan 2021	Aug 2021	Aug 2021	Dec 2021	-	-	-	-	4.667	4.667
									T-ATS(X) Total	**-**	**-**	**-**	**-**	**8.953**	**8.953**
LCAC	101	2015	Dec 2012	Mar 2015	Aug 2018	May 2019	May 2019	Jul 2019	Apr 2020	-	-	3.738	-	-	3.738
LCAC	102	2015	Mar 2015	Sep 2016	Apr 2019	Sep 2019	Sep 2019	Nov 2019	Aug 2020	-	-	-	1.435	-	1.435
LCAC	103	2015	Mar 2015	Nov 2016	Jun 2019	Sep 2019	Mar 2020	Jul 2020	Aug 2020	-	-	-	1.425	-	1.425
LCAC	104	2016	Mar 2016	Mar 2017	Jun 2019	Apr 2020	Sep 2020	Dec 2020	Mar 2021	-	-	-	0.230	1.264	1.494
LCAC	105	2016	Mar 2016	May 2017	Nov 2019	Apr 2020	Oct 2020	Jan 2021	Mar 2021	-	-	-	-	1.500	1.500
LCAC	106	2016	Mar 2016	Aug 2017	Feb 2020	Apr 2020	Nov 2020	Feb 2021	Mar 2021	-	-	-	-	1.500	1.500
LCAC	107	2016	Mar 2016	Oct 2017	May 2020	Nov 2020	Apr 2021	Jul 2021	Oct 2021	-	-	-	-	1.500	1.500
LCAC	108	2016	Mar 2016	Nov 2017	Jul 2020	Nov 2020	May 2021	Aug 2021	Oct 2021	-	-	-	-	1.500	1.500
LCAC	109	2017	Mar 2018	Mar 2018	Aug 2020	Nov 2020	Jun 2021	Sep 2021	Oct 2021	-	-	-	-	1.810	1.810
LCAC	110	2017	Mar 2018	Apr 2018	Oct 2020	Mar 2021	Jul 2021	Nov 2021	Feb 2022	-	-	-	-	1.836	1.836
LCAC	111	2018	Mar 2018	May 2018	Nov 2020	Mar 2021	Aug 2021	Dec 2021	Feb 2022	-	-	-	-	1.731	1.731
LCAC	112	2018	Mar 2018	Jul 2018	Dec 2020	Mar 2021	Sep 2021	Jan 2022	Feb 2022	-	-	-	-	1.730	1.730
LCAC	113	2018	Mar 2018	Aug 2018	Feb 2021	Aug 2021	Jan 2022	Apr 2022	Jul 2022	-	-	-	-	1.730	1.730

Exhibit P-30, Delivery: PB 2019 Navy	**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5110 / Outfitting

Ship Class	Hull Number	Program Year	Contract Award	Start of Const.	Delivery Date	CFO	PSA Start	PSA Finish	OWL Date	Prior Years	FY 2017	FY 2018	FY 2019	To Complete	Total
LCAC	114	2019	Mar 2019	May 2019	Mar 2021	Aug 2021	Feb 2022	May 2022	Jul 2022	-	-	-	-	1.682	1.682
LCAC	115	2019	Mar 2019	Jul 2019	May 2021	Aug 2021	Mar 2022	Jun 2022	Jul 2022	-	-	-	-	1.682	1.682
LCAC	116	2019	Mar 2019	Aug 2019	Jul 2021	Jan 2022	Jun 2022	Sep 2022	Dec 2022	-	-	-	-	1.682	1.682
LCAC	117	2019	Mar 2019	Oct 2019	Sep 2021	Jan 2022	Jul 2022	Oct 2022	Dec 2022	-	-	-	-	1.682	1.682
LCAC	118	2019	Mar 2019	Nov 2019	Nov 2021	Jan 2022	Aug 2022	Nov 2022	Dec 2022	-	-	-	-	1.668	1.668
LCAC	119	2020	Mar 2020	May 2020	Dec 2021	May 2022	Oct 2022	Jan 2023	Apr 2023	-	-	-	-	1.242	1.242
LCAC	120	2020	Mar 2020	Jul 2020	Jan 2022	May 2022	Nov 2022	Feb 2023	Apr 2023	-	-	-	-	1.242	1.242
LCAC	121	2020	Mar 2020	Aug 2020	Mar 2022	May 2022	Dec 2022	Mar 2023	Apr 2023	-	-	-	-	1.242	1.242
LCAC	122	2020	Mar 2020	Oct 2020	Apr 2022	Oct 2022	Mar 2023	Jun 2023	Sep 2023	-	-	-	-	1.323	1.323
LCAC	123	2020	Mar 2020	Nov 2020	Jun 2022	Oct 2022	Apr 2023	Jul 2023	Sep 2023	-	-	-	-	1.401	1.401
LCAC	124	2020	Mar 2020	Jan 2021	Jul 2022	Oct 2022	May 2023	Aug 2023	Sep 2023	-	-	-	-	1.401	1.401
LCAC	125	2020	Mar 2020	Mar 2021	Aug 2022	Jan 2023	Jun 2023	Sep 2023	Dec 2023	-	-	-	-	1.401	1.401
LCAC	126	2020	Mar 2020	Apr 2021	Sep 2022	Jan 2023	Jul 2023	Oct 2023	Dec 2023	-	-	-	-	1.401	1.401
									LCAC Total	**-**	**-**	**3.738**	**3.090**	**35.150**	**41.978**
LCAC SLEP	78	2014	Jun 2014	Aug 2014	Jan 2016	Feb 2016	Apr 2016	Apr 2016	Jan 2017	0.080	0.156	-	-	-	0.236
LCAC SLEP	52	2014	Jun 2014	Mar 2015	Jun 2016	Jul 2016	Sep 2016	Sep 2016	Jun 2017	-	0.200	-	-	-	0.200
LCAC SLEP	83	2014	Jun 2014	Feb 2015	Jul 2016	Aug 2016	Aug 2016	Aug 2016	Jul 2017	0.110	0.200	-	-	-	0.310
LCAC SLEP	57	2014	Jun 2014	Jul 2015	Oct 2016	Nov 2016	Feb 2017	Feb 2017	Oct 2017	0.081	0.200	-	-	-	0.281
LCAC SLEP	84	2015	Sep 2015	Dec 2015	Mar 2017	Apr 2017	Jul 2017	Jul 2017	Mar 2018	-	0.106	0.035	-	-	0.141
LCAC SLEP	58	2015	Sep 2015	Dec 2015	Apr 2017	May 2017	Jun 2017	Jun 2017	Apr 2018	-	0.215	-	-	-	0.215
LCAC SLEP	64	2016	Mar 2016	Jun 2016	Sep 2017	Oct 2017	Nov 2017	Nov 2017	Sep 2018	-	-	0.150	-	-	0.150
LCAC SLEP	85	2016	Mar 2016	Jun 2016	Oct 2017	Nov 2017	Nov 2017	Dec 2017	Oct 2018	-	0.107	0.118	-	-	0.225
LCAC SLEP	65	2016	Mar 2016	Oct 2016	Feb 2018	Mar 2018	Apr 2018	Apr 2018	Feb 2019	-	-	0.150	-	-	0.150
LCAC SLEP	76	2016	Mar 2016	Feb 2017	May 2018	Jun 2018	Jul 2018	Jul 2018	May 2019	-	-	0.016	0.134	-	0.150
LCAC SLEP	86	2017	Sep 2018	Dec 2018	Mar 2020	Apr 2020	May 2020	May 2020	Mar 2021	-	-	-	-	0.225	0.225
LCAC SLEP	87	2017	Sep 2018	May 2019	Aug 2020	Sep 2020	Oct 2020	Oct 2020	Aug 2021	-	-	-	-	0.225	0.225
LCAC SLEP	77	2017	Sep 2018	Oct 2019	Jan 2021	Feb 2021	Mar 2021	Mar 2021	Jan 2022	-	-	-	-	0.225	0.225
LCAC SLEP	50	2019	Jun 2019	Jan 2020	Apr 2021	May 2021	Jun 2021	Jun 2021	Apr 2022	-	-	-	-	0.225	0.225
									LCAC SLEP Total	**0.271**	**1.184**	**0.469**	**0.134**	**0.900**	**2.958**
									Full Funding TOA - Post Delivery Total	**490.649**	**451.121**	**421.905**	**404.011**	**2,484.790**	**4,252.476**

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5112 / Ship to Shore Connector

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	8	2	3	5	-	5	8	8	8	8	22	72
Gross/Weapon System Cost *($ in Millions)*	408.430	128.067	212.554	325.375	0.000	325.375	507.903	504.691	523.312	472.608	1,633.776	4,716.716
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Less Cost To Complete *($ in Millions)*	14.500	-	-	-	-	-	-	-	-	-	-	14.500
Less Previously Appropriated RDT&E,N *($ in Millions)*	23.700	-	-	-	-	-	-	-	-	-	-	23.700
Net Procurement (P-1) *($ in Millions)*	370.230	128.067	212.554	325.375	0.000	325.375	507.903	504.691	523.312	472.608	1,633.776	4,678.516
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Plus Cost To Complete *($ in Millions)*	-	-	5.100	9.400	-	9.400	-	-	-	-	-	14.500
Plus Previously Appropriated RDT&E,N *($ in Millions)*	23.700	-	-	-	-	-	-	-	-	-	-	23.700
Total Obligation Authority *($ in Millions)*	**393.930**	**128.067**	**217.654**	**334.775**	**0.000**	**334.775**	**507.903**	**504.691**	**523.312**	**472.608**	**1,633.776**	**4,716.716**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	0.300	-	5.112	6.377	-	6.377	11.631	20.894	8.499	13.608	76.830	143.251
Total *($ in Millions)*	**394.230**	**128.067**	**222.766**	**341.152**	**-**	**341.152**	**519.534**	**525.585**	**531.811**	**486.216**	**1,710.606**	**4,859.967**
Gross/Weapon System Unit Cost *($ in Millions)*	51.054	64.034	70.851	65.075	-	65.075	63.488	63.086	65.414	59.076	74.263	65.510

Description:

The Ship to Shore Connector (SSC) program provides the capability to rapidly move assault forces with the littoral operational environment to accomplish Unified Command Plan (UCP) missions and ensures the Joint Force Commander's (JFCDR's) ability to conduct amphibious operations and operate over the high water mark, including movement over ice, mud, rivers, swamps and marshes. SSC provides the functional replacement for the LCAC Class of ships, which began reaching extended service life in 2015.

The Test and Training craft (Craft 100) and R&D costs for LCAC 101 are funded in RDT&E PE 0604567N and PE 0605220N Project 3137.

The Department of Defense Appropriations Act, 2015 directed that the Department complete LCAC 101 in the Shipbuilding and Conversion, Navy Appropriation. LCAC 101 is partially financed with $23.7M of FY 13/FY 14 R&D funding.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5112 / Ship to Shore Connector

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Characteristics:	Aluminum
Length Overall	91.8 ft
Beam	48.3 ft
Displacement	180.57 metric tons
Draft	N/A

Production Status:	LCAC 101	LCAC 102	LCAC 103	LCAC 104	LCAC 105	LCAC 106	LCAC 107
Contract Award Date	Dec 2012	Mar 2015	Mar 2015	Mar 2016	Mar 2016	Mar 2016	Mar 2016
Months to Completion							
a) Award to Delivery	68 months	49 months	51 months	39 months	44 months	47 months	50 months
b) Construction Start to Delivery	41 months	31 months	31 months	27 months	30 months	30 months	31 months
Delivery Date	Aug 2018	Apr 2019	Jun 2019	Jun 2019	Nov 2019	Feb 2020	May 2020
Completion Of Fitting Out	May 2019	Sep 2019	Sep 2019	Apr 2020	Apr 2020	Apr 2020	Nov 2020
Obligation Work Limit Date	Apr 2020	Aug 2020	Aug 2020	Mar 2021	Mar 2021	Mar 2021	Oct 2021

Production Status:	LCAC 108	LCAC 109	LCAC 110	LCAC 111	LCAC 112	LCAC 113	LCAC 114
Contract Award Date	Mar 2016	Mar 2018	Mar 2018	Mar 2018	Mar 2018	Mar 2018	Mar 2019
Months to Completion							
a) Award to Delivery	52 months	29 months	31 months	32 months	33 months	35 months	24 months
b) Construction Start to Delivery	32 months	29 months	30 months	30 months	29 months	30 months	22 months
Delivery Date	Jul 2020	Aug 2020	Oct 2020	Nov 2020	Dec 2020	Feb 2021	Mar 2021
Completion Of Fitting Out	Nov 2020	Nov 2020	Mar 2021	Mar 2021	Mar 2021	Aug 2021	Aug 2021
Obligation Work Limit Date	Oct 2021	Oct 2021	Feb 2022	Feb 2022	Feb 2022	Jul 2022	Jul 2022

Production Status:	LCAC 115	LCAC 116	LCAC 117	LCAC 118
Contract Award Date	Mar 2019	Mar 2019	Mar 2019	Mar 2019
Months to Completion				
a) Award to Delivery	26 months	28 months	30 months	32 months
b) Construction Start to Delivery	22 months	23 months	23 months	24 months
Delivery Date	May 2021	Jul 2021	Sep 2021	Nov 2021
Completion Of Fitting Out	Aug 2021	Jan 2022	Jan 2022	Jan 2022
Obligation Work Limit Date	Jul 2022	Dec 2022	Dec 2022	Dec 2022

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	N/A	N/A		
Issue Date for TLS	N/A	N/A		
Preliminary Design	Apr 2008	May 2009		
Contract Design	May 2009	Jul 2010		
Detail Design	Jul 2012	Sep 2014		
Request for Proposals	May 2011	Jul 2012		

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5112 / Ship to Shore Connector	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Design Agent	NAVSEA/TEXTRON,INC			

Classification of Cost Estimate:

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5112 / Ship to Shore Connector

Cost Categories	FY 2015		FY 2016		FY 2017		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Plan Costs	3		5		2		3		5	
Basic Construction/Conversion		152.103		193.347		112.172		184.091		287.948
Change Orders		6.425		3.480		2.833		4.248		6.736
Electronics		3.961		8.500		4.162		6.305		10.718
Hull, Mechanical, and Electrical (HM&E)		12.547		4.000		4.235		7.497		9.345
Ordnance		0.010		0.015		0.006		0.009		0.016
Other Cost		22.754		1.288		4.659		10.404		10.612
Total Ship Estimate		**197.800**		**210.630**		**128.067**		**212.554**		**325.375**
Less Cost to Complete FY 2018		5.100		-		-		-		-
Less Cost to Complete FY 2019		9.400		-		-		-		-
Less RDTEN FY 2013		21.486		-		-		-		-
Less RDTEN FY 2014		2.214		-		-		-		-
Net P-1 Funding		**159.600**		**210.630**		**128.067**		**212.554**		**325.375**

Remarks:
The FY 2017 unit cost increase over FY 2016 craft is due to executing a new contract for fewer craft quantities in FY17-18 and anticipated pricing adjustments experienced on the 2015 contract (new contract for FY17 craft in FY18).

Exhibit P-27, Ship Production Schedule: PB 2019 Navy			Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1		P-1 Line Item Number / Title: 5112 / Ship to Shore Connector			
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
LCAC 101	TEXTRON, INC	2015	Dec 2012	Mar 2015	Aug 2018
LCAC 102	TEXTRON, INC	2015	Mar 2015	Sep 2016	Apr 2019
LCAC 103	TEXTRON, INC	2015	Mar 2015	Nov 2016	Jun 2019
LCAC 104	TEXTRON, INC	2016	Mar 2016	Mar 2017	Jun 2019
LCAC 105	TEXTRON, INC	2016	Mar 2016	May 2017	Nov 2019
LCAC 106	TEXTRON, INC	2016	Mar 2016	Aug 2017	Feb 2020
LCAC 107	TEXTRON, INC	2016	Mar 2016	Oct 2017	May 2020
LCAC 108	TEXTRON, INC	2016	Mar 2016	Nov 2017	Jul 2020
LCAC 109	TBD	2017	Mar 2018	Mar 2018	Aug 2020
LCAC 110	TBD	2017	Mar 2018	Apr 2018	Oct 2020
LCAC 111	TBD	2018	Mar 2018	May 2018	Nov 2020
LCAC 112	TBD	2018	Mar 2018	Jul 2018	Dec 2020
LCAC 113	TBD	2018	Mar 2018	Aug 2018	Feb 2021
LCAC 114	TBD	2019	Mar 2019	May 2019	Mar 2021
LCAC 115	TBD	2019	Mar 2019	Jul 2019	May 2021
LCAC 116	TBD	2019	Mar 2019	Aug 2019	Jul 2021
LCAC 117	TBD	2019	Mar 2019	Oct 2019	Sep 2021
LCAC 118	TBD	2019	Mar 2019	Nov 2019	Nov 2021
LCAC 119	TBD	2020	Mar 2020	May 2020	Dec 2021
LCAC 120	TBD	2020	Mar 2020	Jul 2020	Jan 2022
LCAC 121	TBD	2020	Mar 2020	Aug 2020	Mar 2022
LCAC 122	TBD	2020	Mar 2020	Oct 2020	Apr 2022
LCAC 123	TBD	2020	Mar 2020	Nov 2020	Jun 2022
LCAC 124	TBD	2020	Mar 2020	Jan 2021	Jul 2022
LCAC 125	TBD	2020	Mar 2020	Mar 2021	Aug 2022
LCAC 126	TBD	2020	Mar 2020	Apr 2021	Sep 2022
LCAC 127	TBD	2021	Mar 2021	May 2021	Nov 2022
LCAC 128	TBD	2021	Mar 2021	Jul 2021	Dec 2022
LCAC 129	TBD	2021	Mar 2021	Aug 2021	Feb 2023
LCAC 130	TBD	2021	Mar 2021	Oct 2021	Mar 2023
LCAC 131	TBD	2021	Mar 2021	Nov 2021	May 2023
LCAC 132	TBD	2021	Mar 2021	Jan 2022	Jun 2023
LCAC 133	TBD	2021	Mar 2021	Mar 2022	Aug 2023

Exhibit P-27, Ship Production Schedule: PB 2019 Navy			Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1			P-1 Line Item Number / Title: 5112 / Ship to Shore Connector		
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
LCAC 134	TBD	2021	Mar 2021	Apr 2022	Sep 2023
LCAC 135	TBD	2022	Mar 2022	May 2022	Nov 2023
LCAC 136	TBD	2022	Mar 2022	Jul 2022	Dec 2023
LCAC 137	TBD	2022	Mar 2022	Aug 2022	Feb 2024
LCAC 138	TBD	2022	Mar 2022	Oct 2022	Mar 2024
LCAC 139	TBD	2022	Mar 2022	Nov 2022	May 2024
LCAC 140	TBD	2022	Mar 2022	Jan 2023	Jun 2024
LCAC 141	TBD	2022	Mar 2022	Mar 2023	Aug 2024
LCAC 142	TBD	2022	Mar 2022	Apr 2023	Sep 2024
LCAC 143	TBD	2023	Mar 2023	May 2023	Nov 2024
LCAC 144	TBD	2023	Mar 2023	Jul 2023	Dec 2024
LCAC 145	TBD	2023	Mar 2023	Aug 2023	Feb 2025
LCAC 146	TBD	2023	Mar 2023	Oct 2023	Mar 2025
LCAC 147	TBD	2023	Mar 2023	Nov 2023	May 2025
LCAC 148	TBD	2023	Mar 2023	Jan 2024	Jun 2025
LCAC 149	TBD	2023	Mar 2023	Feb 2024	Aug 2025
LCAC 150	TBD	2023	Mar 2023	Apr 2024	Sep 2025

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5113 / Service Craft

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	40	3	4	5	-	5	8	13	11	7	-	91
Gross/Weapon System Cost *($ in Millions)*	135.214	65.192	23.994	72.062	0.000	72.062	74.356	106.172	108.657	110.865	-	696.512
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	135.214	65.192	23.994	72.062	0.000	72.062	74.356	106.172	108.657	110.865	-	696.512
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**135.214**	**65.192**	**23.994**	**72.062**	**0.000**	**72.062**	**74.356**	**106.172**	**108.657**	**110.865**	**-**	**696.512**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	3.000	-	-	-	-	-	-	-	-	-	-	3.000
Total *($ in Millions)*	**138.214**	**65.192**	**23.994**	**72.062**	**-**	**72.062**	**74.356**	**106.172**	**108.657**	**110.865**	**-**	**699.512**
Gross/Weapon System Unit Cost *($ in Millions)*	3.380	21.731	5.999	14.412	-	14.412	9.295	8.167	9.878	15.838	-	7.654

Description:

The FY 2019 funding request was reduced by $.390 million to reflect the Department of Navy's effort to support the Office of Management and Budget directed reforms for Efficiency and Effectiveness that include a lean, accountable, more efficient government.

The US Navy owns/operates approximately 366 Service Craft consisting of 36 different classes of craft at 56 different commands and activities throughout the world. Service Craft provide critical support to carriers, submarines, and other Navy vessels through port operations and ship maintenance. Nearly half of the Service Craft inventory is over 40 years of age. The Service Craft budget supports the acquisition and procurement of replacement craft as follows:

Auxiliary Personnel Lighters - Small (APL(S)): APLs provide crew messing, duty crew berthing, and administrative training spaces to ships and improve the quality-of-life for sailors during CNO availabilities.

Harbor Tugs (YTs): YTs provide port operations towing, mooring, docking, undocking and escort of submarines, aircraft carriers, and other Navy vessels.

Fuel Oil Barges (YONs): YONs carry liquid petroleum products for refueling ships.

Waste Oil Barges (YWOs): YWOs support the offload of waste oil from ships and transport for processing.

Covered Lighters (YFNs): YFNs transport ordnance, equipment and cargo which must be protected from weather.

Open Lighters (YCs): YCs transport cargo/equipment and serve as a work platform for ship maintenance.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5113 / Service Craft

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Characteristics:	Hull Various	Multiple Craft
Length Overall	Various	Various
Beam	Various	Various
Displacement	Various	Various
Draft	Various	Various

Production Status:	YT 808	YT 809	YWO 03	YT 810	YT 811	APL 67	YT 812
Contract Award Date	Feb 2018	Feb 2018	Jul 2018	Feb 2018	Feb 2018	Apr 2018	Mar 2018
Months to Completion							
a) Award to Delivery	13 months	15 months	14 months	20 months	22 months	19 months	14 months
b) Construction Start to Delivery	12 months	12 months	13 months	12 months	12 months	16 months	12 months
Delivery Date	Mar 2019	May 2019	Sep 2019	Oct 2019	Dec 2019	Nov 2019	May 2019
Completion Of Fitting Out	Jun 2019	Aug 2019	Dec 2019	Jan 2020	Mar 2020	Feb 2020	Aug 2019
Obligation Work Limit Date	May 2020	Jul 2020	Nov 2020	Dec 2020	Feb 2021	Jan 2021	Jul 2020

Production Status:	YON 1801	YWO 04	YWO 05	APL 68	YFN 1902	YFN 1901	YT 813
Contract Award Date	Aug 2018	Aug 2018	Aug 2018	Feb 2019	Mar 2019	Mar 2019	Mar 2019
Months to Completion							
a) Award to Delivery	15 months	13 months	15 months	14 months	8 months	8 months	16 months
b) Construction Start to Delivery	14 months	10 months	9 months	13 months	7 months	7 months	12 months
Delivery Date	Nov 2019	Sep 2019	Nov 2019	Apr 2020	Nov 2019	Nov 2019	Jul 2020
Completion Of Fitting Out	Feb 2020	Dec 2019	Feb 2020	Jul 2020	Feb 2020	Feb 2020	Oct 2020
Obligation Work Limit Date	Jan 2021	Nov 2020	Jan 2021	Mar 2021	Jan 2021	Jan 2021	Sep 2021

Production Status:	YT 814
Contract Award Date	Mar 2019
Months to Completion	
a) Award to Delivery	19 months
b) Construction Start to Delivery	12 months
Delivery Date	Oct 2020
Completion Of Fitting Out	Jan 2021
Obligation Work Limit Date	Dec 2021

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	N/A	N/A		
Issue Date for TLS	N/A	N/A		
Preliminary Design	N/A	N/A		
Contract Design	N/A	N/A		
Detail Design	N/A	N/A		
Request for Proposals	N/A	N/A		

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5113 / Service Craft	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Design Agent				

Classification of Cost Estimate:

Justification:
APL barracks craft provide critical berthing and messing facilities for sailors while their ships are in port for availabilities and Inter-Deployment Training Cycles (IDTC). Even when the Home Port Ashore initiative is fully implemented, berthing barges will still be required to meet the original mission of providing berthing for Duty Crews and messing, training, and office space for the entire crew per OPNAVINST 4700.38B. Thirteen (13) of the seventeen (17) APLs in service were built from 1944-1946; they do not meet current safety standards, are not dual gender-compatible and lack modern communication capabilities. This program for New APLs replaces outdated and dilapidated transport ships and will greatly improve our sailors' quality of life, improve safety during availabilities and save the Navy a significant amount of money over the life of the program.

YT harbor tugboats provide critical vessel docking/undocking, towing, escort, personnel transfer, and emergency services to carriers, ships, and submarines. New YTs are required to meet mission requirements and to replace aging YTB tugboats in the Northwest Region, Yokosuka, and Portsmouth Naval Shipyard.

YON Fuel Oil Barges will greatly reduce the risk of a major fuel oil spill. Many existing YONs are 50-60 years old and of single hull construction. New YON Fuel Oil Barges will be double-hulled and will meet the requirements of the Oil Protection Act of 1990 (OPA 90).

New YWO barges will be double-hulled and will have piping and other systems specifically designed for transferring oily waste. Existing barges being used to transport oily waste are 66 to 78 years old and in extremely poor condition.

New YC Open Lighter and YFN Covered Lighter barges are required to replace the oldest YCs and YFNs in the Fleet, which are over 50 years old and have become unaffordable to overhaul.

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5113 / Service Craft

Cost Categories	FY 2016		FY 2017		FY 2018		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Plan Costs	3		3		4		5	
Basic Construction/Conversion		28.217		62.403		23.114		69.663
Change Orders		1.400		1.825		0.580		1.399
Hull, Mechanical, and Electrical (HM&E)		0.397		0.964		0.300		1.000
Total Ship Estimate		**30.014**		**65.192**		**23.994**		**72.062**
Net P-1 Funding		**30.014**		**65.192**		**23.994**		**72.062**

Remarks:
FY 16 Craft:
2 YT: $26.437
1 YWO: $3.577
TOTAL: $30.014

FY 17 Craft:
1 APL: $39.000
2 YT: $26.192
TOTAL: $65.192

FY 18 Craft:
1 YT: $13.660
2 YWO: $6.000
1 YON: $4.334
TOTAL: $23.994

FY 19 Craft:
1 APL: $38.055
2 YFN $6.243
2 YT: $27.764
TOTAL: $72.062

Exhibit P-27, Ship Production Schedule: PB 2019 Navy				Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1			P-1 Line Item Number / Title: 5113 / Service Craft		
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
YT 808	TBD	2016	Feb 2018	Mar 2018	Mar 2019
YT 809	TBD	2016	Feb 2018	May 2018	May 2019
YWO 03	TBD	2016	Jul 2018	Aug 2018	Sep 2019
YT 810	TBD	2017	Feb 2018	Oct 2018	Oct 2019
YT 811	TBD	2017	Feb 2018	Dec 2018	Dec 2019
APL 67	TBD	2017	Apr 2018	Jul 2018	Nov 2019
YT 812	TBD	2018	Mar 2018	May 2018	May 2019
YON 1801	TBD	2018	Aug 2018	Sep 2018	Nov 2019
YWO 04	TBD	2018	Aug 2018	Nov 2018	Sep 2019
YWO 05	TBD	2018	Aug 2018	Feb 2019	Nov 2019
APL 68	TBD	2019	Feb 2019	Mar 2019	Apr 2020
YFN 1902	TBD	2019	Mar 2019	Apr 2019	Nov 2019
YFN 1901	TBD	2019	Mar 2019	Apr 2019	Nov 2019
YT 813	TBD	2019	Mar 2019	Jul 2019	Jul 2020
YT 814	TBD	2019	Mar 2019	Oct 2019	Oct 2020
APL 69	TBD	2020	Feb 2020	Mar 2020	Apr 2021
YON 2001	TBD	2020	Mar 2020	Apr 2020	Jun 2021
YWO 6	TBD	2020	Mar 2020	Apr 2020	Dec 2020
YC 2001	TBD	2020	Mar 2020	Apr 2020	Dec 2020
YT 815	TBD	2020	Mar 2020	May 2020	May 2021
YON 2002	TBD	2020	Mar 2020	Jul 2020	Sep 2021
YWO 7	TBD	2020	Mar 2020	Jul 2020	Mar 2021
YWO 8	TBD	2020	Mar 2020	Oct 2020	Jun 2021
APL 70	TBD	2021	Feb 2021	Mar 2021	Apr 2022
APL 71	TBD	2021	Feb 2021	Jun 2021	Jul 2022
YON 2102	TBD	2021	Mar 2021	Apr 2021	Jun 2022
YC 2101	TBD	2021	Mar 2021	Apr 2021	Oct 2021
YWO 9	TBD	2021	Mar 2021	Apr 2021	Jun 2022
YFN 2101	TBD	2021	Mar 2021	Apr 2021	Nov 2021
YFN 2102	TBD	2021	Mar 2021	Jun 2021	Feb 2022
YON 2101	TBD	2021	Mar 2021	Jun 2021	Sep 2022
YC 2102	TBD	2021	Mar 2021	Jun 2021	Dec 2021
YWO 10	TBD	2021	Mar 2021	Jul 2021	Jul 2022

Exhibit P-27, Ship Production Schedule: PB 2019 Navy				Date: February 2018	
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1			P-1 Line Item Number / Title: 5113 / Service Craft		
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
YC 2103	TBD	2021	Mar 2021	Aug 2021	Feb 2022
YC 2104	TBD	2021	Mar 2021	Oct 2021	Apr 2022
YWO 11	TBD	2021	Mar 2021	Oct 2021	Dec 2022
APL 72	TBD	2022	Feb 2022	Mar 2022	Apr 2023
APL 73	TBD	2022	Feb 2022	Jun 2022	Jul 2023
YC 2201	TBD	2022	Mar 2022	Apr 2022	Oct 2022
YWO 12	TBD	2022	Mar 2022	Apr 2022	Jun 2023
YON 2201	TBD	2022	Mar 2022	Apr 2022	Feb 2023
YC 2202	TBD	2022	Mar 2022	Jun 2022	Dec 2022
YON 2202	TBD	2022	Mar 2022	Jul 2022	Sep 2023
YWO 13	TBD	2022	Mar 2022	Jul 2022	Sep 2023
YC 2203	TBD	2022	Mar 2022	Aug 2022	Feb 2023
YWO 14	TBD	2022	Mar 2022	Oct 2022	Dec 2023
YON 2203	TBD	2022	Apr 2022	Aug 2022	Feb 2023
YON 2301	TBD	2023	Mar 2022	Oct 2022	Dec 2023
APL 74	TBD	2023	Feb 2023	Mar 2023	Apr 2024
APL 75	TBD	2023	Feb 2023	Jun 2023	Jul 2024
YT 816	TBD	2023	Mar 2023	Apr 2023	Apr 2024
YC 2301	TBD	2023	Mar 2023	Apr 2023	Oct 2023
YON 2302	TBD	2023	Mar 2023	Apr 2023	Jun 2024
YON 2303	TBD	2023	Mar 2023	Jun 2023	Sep 2024

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5139 / LCAC SLEP

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	64	3	-	1	-	1	-	-	-	-	-	68
Gross/Weapon System Cost *($ in Millions)*	1,340.197	80.300	0.000	23.321	0.000	23.321	0.000	0.000	0.000	0.000	-	1,443.818
Less PY Advance Procurement *($ in Millions)*	27.900	-	-	-	-	-	-	-	-	-	-	27.900
Less Cost To Complete *($ in Millions)*	14.000	-	-	-	-	-	-	-	-	-	-	14.000
Less Subsequent Year Full Funding *($ in Millions)*	1.774	-	-	-	-	-	-	-	-	-	-	1.774
Less Hurricane *($ in Millions)*	19.800	-	-	-	-	-	-	-	-	-	-	19.800
Less Transfer *($ in Millions)*	1.500	-	-	-	-	-	-	-	-	-	-	1.500
Net Procurement (P-1) *($ in Millions)*	1,275.223	80.300	0.000	23.321	0.000	23.321	0.000	0.000	0.000	0.000	-	1,378.844
Plus Subsequent Year Full Funding *($ in Millions)*	-	1.774	-	-	-	-	-	-	-	-	-	1.774
Full Funding TOA *($ in Millions)*	1,275.223	82.074	-	23.321	-	23.321	-	-	-	-	-	1,380.618
Plus CY Advance Procurement *($ in Millions)*	27.900	-	-	-	-	-	-	-	-	-	-	27.900
Plus Cost To Complete *($ in Millions)*	14.000	-	-	-	-	-	-	-	-	-	-	14.000
Plus Transfer *($ in Millions)*	1.500	-	-	-	-	-	-	-	-	-	-	1.500
Plus Hurricane *($ in Millions)*	19.800	-	-	-	-	-	-	-	-	-	-	19.800
Total Obligation Authority *($ in Millions)*	**1,338.423**	**82.074**	**0.000**	**23.321**	**0.000**	**23.321**	**0.000**	**0.000**	**0.000**	**0.000**	**-**	**1,443.818**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	10.838	2.044	0.575	0.134	-	0.134	-	-	-	-	-	13.591
Total *($ in Millions)*	**1,349.261**	**84.118**	**0.575**	**23.455**	**-**	**23.455**	**-**	**-**	**-**	**-**	**-**	**1,457.409**
Gross/Weapon System Unit Cost *($ in Millions)*	20.941	26.767	-	23.321	-	23.321	-	-	-	-	-	21.233

Description:

Landing Craft, Air Cushion (LCAC) transports weapon systems, equipment, cargo and personnel of the assault elements of the Marine Air/Ground Task Force from ship to shore and across the beach. The LCAC Service Life Extension Program (SLEP) extends the craft service life from twenty years to thirty years. The program incorporates the following modifications and enhancements: upgrade from the TF40B engines to the ETF40B engines; repair corrosion damage; replace obsolete electronics; upgrade C4N suite; and replace deep skirt.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5139 / LCAC SLEP

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Characteristics:	Air Cushion
Length Overall	91.8 ft (on cushion)
Beam	49.2 ft (on cushion)
Displacement	106 tons
Draft	None (air cushion)

Production Status:	LCAC SLEP 65	LCAC SLEP 76	LCAC SLEP 86	LCAC SLEP 87	LCAC SLEP 77	LCAC SLEP 50
Contract Award Date	Mar 2016	Mar 2016	Sep 2018	Sep 2018	Sep 2018	Jun 2019
Months to Completion						
a) Award to Delivery	23 months	26 months	18 months	23 months	28 months	22 months
b) Construction Start to Delivery	16 months	15 months	15 months	15 months	15 months	15 months
Delivery Date	Feb 2018	May 2018	Mar 2020	Aug 2020	Jan 2021	Apr 2021
Completion Of Fitting Out	Mar 2018	Jun 2018	Apr 2020	Sep 2020	Feb 2021	May 2021
Obligation Work Limit Date	Feb 2019	May 2019	Mar 2021	Aug 2021	Jan 2022	Apr 2022

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	N/A	N/A		
Issue Date for TLS	N/A	N/A		
Preliminary Design	N/A	N/A		
Contract Design	N/A	N/A		
Detail Design	N/A	N/A		
Request for Proposals	Feb 2018	Apr 2018		
Design Agent	Landing Craft Planning Yard			

Classification of Cost Estimate: N/A

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5139 / LCAC SLEP

Cost Categories	FY 2016		FY 2017		FY 2019	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Plan Costs	4		3		1	
Basic Construction/Conversion		35.796		34.710		11.570
Electronics		7.051		6.542		1.834
Hull, Mechanical, and Electrical (HM&E)		35.401		33.850		9.202
Other Cost		4.264		5.198		0.715
Total Ship Estimate		**82.512**		**80.300**		**23.321**
Less Subsequent Full Funding FY 2017		1.774		-		-
Net P-1 Funding		**80.738**		**80.300**		**23.321**

Exhibit P-27, Ship Production Schedule: PB 2019 Navy			Date: February 2018		
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1		P-1 Line Item Number / Title: 5139 / LCAC SLEP			
Ship	**Shipbuilder**	**Fiscal Year**	**Contract Award**	**Start of Construction**	**Delivery Date**
LCAC SLEP 65	L-3 UNIDYNE, INC.	2016	Mar 2016	Oct 2016	Feb 2018
LCAC SLEP 76	L-3 UNIDYNE, INC.	2016	Mar 2016	Feb 2017	May 2018
LCAC SLEP 86	TBD	2017	Sep 2018	Dec 2018	Mar 2020
LCAC SLEP 87	TBD	2017	Sep 2018	May 2019	Aug 2020
LCAC SLEP 77	TBD	2017	Sep 2018	Oct 2019	Jan 2021
LCAC SLEP 50	TBD	2019	Jun 2019	Jan 2020	Apr 2021

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5212 / YP Craft Maintenance/ROH/SLEP

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	6	6	-	-	-	-	-	-	-	-	-	12
Gross/Weapon System Cost *($ in Millions)*	21.838	21.363	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	43.201
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	21.838	21.363	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	43.201
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**21.838**	**21.363**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**-**	**43.201**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Plus Outfitting and Post Delivery *($ in Millions)*	0.146	0.280	-	-	-	-	0.145	-	-	-	-	0.571
Total *($ in Millions)*	**21.984**	**21.643**	**-**	**-**	**-**	**-**	**0.145**	**-**	**-**	**-**	**-**	**43.772**
Gross/Weapon System Unit Cost *($ in Millions)*	3.640	3.561	-	-	-	-	-	-	-	-	-	3.600

Description:

Naval Academy YP (Yard Patrol) craft are utilized to train midshipmen on piloting, seamanship, navigation, and engineering. The YP Service Life Extension Program (SLEP) extends the YP 676 Class service life approximately 10 years beyond the current average vessel age of 27 years. YP SLEP work items include but are not limited to the following: hull fendering, electronic navigation system components, paint and non-skid, damaged hull sections, hatches and deck planking, various pumps (bilge, seawater cooling, fire), and galley appliances. The SLEP will also include the overhaul of the engines and transformers, and propeller repair. The required repairs will vary by craft and will be conducted at both the U.S. Coast Guard Yard in Baltimore and private small business shipyards.

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5212 / YP Craft Maintenance/ROH/SLEP

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Characteristics:	YP 676 Class
Length Overall	108 ft
Beam	24 ft
Displacement	173 tons
Draft	6 ft

Production Status:	YP SLEP 688	YP SLEP 695	YP SLEP 694	YP SLEP 689	YP SLEP 692	YP SLEP 686	YP SLEP 698
Contract Award Date	Aug 2016	Aug 2016	Oct 2017	Feb 2018	Feb 2018	Jul 2018	Aug 2018
Months to Completion							
a) Award to Delivery	17 months	25 months	6 months	8 months	8 months	8 months	8 months
b) Construction Start to Delivery	9 months	7 months	5 months	5 months	5 months	5 months	5 months
Delivery Date	Jan 2018	Sep 2018	Apr 2018	Oct 2018	Oct 2018	Mar 2019	Apr 2019
Completion Of Fitting Out	Apr 2018	Dec 2018	Jul 2018	Jan 2019	Jan 2019	Jun 2019	Jul 2019
Obligation Work Limit Date	Mar 2019	Nov 2019	Jun 2019	Dec 2019	Dec 2020	May 2020	Jun 2020

Production Status:	YP SLEP 690	YP SLEP 691	YP SLEP 683	YP SLEP 684	YP SLEP 700
Contract Award Date	Aug 2018	Jan 2019	Feb 2019	Feb 2019	Jul 2019
Months to Completion					
a) Award to Delivery	8 months	8 months	8 months	8 months	8 months
b) Construction Start to Delivery	5 months	5 months	5 months	5 months	5 months
Delivery Date	Apr 2019	Sep 2019	Oct 2019	Oct 2019	Mar 2020
Completion Of Fitting Out	Jul 2019	Dec 2019	Jan 2020	Jan 2020	Jun 2020
Obligation Work Limit Date	Jun 2020	Nov 2020	Dec 2020	Dec 2020	May 2021

Design Schedule	Start / Issue	Complete / Response	Reissue	Reissue Complete / Response
Issue Date for TLR	N/A	N/A		
Issue Date for TLS	N/A	N/A		
Preliminary Design	N/A	N/A		
Contract Design	N/A	N/A		
Detail Design	N/A	N/A		
Request for Proposals	Jun 2016	Sep 2017		
Design Agent	PEO (Ships), PMS 325 Detachment Boston			

Classification of Cost Estimate: N/A

Exhibit P-5c, Ship Cost Analysis: PB 2019 Navy	**Date:** February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5212 / YP Craft Maintenance/ROH/SLEP

Cost Categories	FY 2016		FY 2017	
	Qty *(Each)*	Total Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Basic Construction/Conversion	6	17.936	6	17.936
Change Orders		0.944		0.469
Electronics		1.458		1.458
Hull, Mechanical, and Electrical (HM&E)		1.500		1.500
Total Ship Estimate		**21.838**		**21.363**
Net P-1 Funding		**21.838**		**21.363**

Exhibit P-27, Ship Production Schedule: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5212 / YP Craft Maintenance/ROH/SLEP

Ship	Shipbuilder	Fiscal Year	Contract Award	Start of Construction	Delivery Date
YP SLEP 688	USCG YARD	2016	Aug 2016	Apr 2017	Jan 2018
YP SLEP 695	USCG YARD	2016	Aug 2016	Feb 2018	Sep 2018
YP SLEP 694	LYON SHIPYARD/TECNICO CORP.	2016	Oct 2017	Nov 2017	Apr 2018
YP SLEP 689	LYON SHIPYARD/TECNICO CORP.	2016	Feb 2018	May 2018	Oct 2018
YP SLEP 692	LYON SHIPYARD/TECNICO CORP.	2016	Feb 2018	May 2018	Oct 2018
YP SLEP 686	USCG YARD	2016	Jul 2018	Oct 2018	Mar 2019
YP SLEP 698	LYON SHIPYARD/TECNICO CORP.	2017	Aug 2018	Nov 2018	Apr 2019
YP SLEP 690	LYON SHIPYARD/TECNICO CORP.	2017	Aug 2018	Nov 2018	Apr 2019
YP SLEP 691	LYON SHIPYARD/TECNICO CORP.	2017	Jan 2019	Apr 2019	Sep 2019
YP SLEP 683	LYON SHIPYARD/TECNICO CORP.	2017	Feb 2019	May 2019	Oct 2019
YP SLEP 684	LYON SHIPYARD/TECNICO CORP.	2017	Feb 2019	May 2019	Oct 2019
YP SLEP 700	LYON SHIPYARD/TECNICO CORP.	2017	Jul 2019	Oct 2019	Mar 2020

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5300 / Completion of PY Shpbldg Progr

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	117.542	207.099	0.000	207.099	101.803	6.155	41.530	0.000	-	474.129
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	117.542	207.099	0.000	207.099	101.803	6.155	41.530	0.000	-	474.129
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
LCS *($ in Millions)*	-	-	26.865	103.184	-	103.184	37.092	6.155	41.530	-	-	214.826
CVN *($ in Millions)*	-	-	20.000	-	-	-	-	-	-	-	-	20.000
DDG-51 *($ in Millions)*	-	-	51.377	53.966	-	53.966	61.011	-	-	-	-	166.354
LHA *($ in Millions)*	-	-	14.200	25.100	-	25.100	-	-	-	-	-	39.300
LCAC *($ in Millions)*	-	-	5.100	9.400	-	9.400	-	-	-	-	-	14.500
TAO Fleet Oiler *($ in Millions)*	-	-	-	15.449	-	15.449	3.700	-	-	-	-	19.149
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**117.542**	**207.099**	**0.000**	**207.099**	**101.803**	**6.155**	**41.530**	**0.000**	**-**	**474.129**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)												
Initial Spares *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Flyaway Unit Cost *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-
Total *($ in Millions)*	**-**	**-**	**117.542**	**207.099**	**-**	**207.099**	**101.803**	**6.155**	**41.530**	**-**	**-**	**474.129**
Gross/Weapon System Unit Cost *($ in Millions)*	-	-	-	-	-	-	-	-	-	-	-	-

Description:

Note: General Provision 8073 of the Consolidated Appropriations Act, 2017 directs that funds appropriated for the Completion of Prior Year Shipbuilding Programs be merged with and available for the same purposes as the appropriation to which transferred.

[P5 / [2127] Littoral Combat Ship (LCS)]: Funds in FY 2018 are for the Government responsible portion of the shipbuilding construction contract overrun for LCS 9, LCS 10, LCS 11, and LCS 12 ($6.4M), and for the Government responsible portion of the shipbuilding construction contract overrun for LCS 17, LCS 18, LCS 19, and LCS 20 ($20.5M). Funds in FY 2019 are for the Government responsible portion of the shipbuilding construction contract overrun for LCS 17, LCS 18, LCS 19, and LCS 20 ($19.5M), and for the Government responsible portion of the shipbuilding construction contract overrun for LCS 21, LCS 22, and LCS 24 ($83.7M).

[P5 / [2001] CVN (Carrier Replacement Program)]: Funds in FY 2018 are for the repairs to the Number 1 Main Turbine Generator on CVN 78 ($20.0M).

[P5 / [2122] DDG-51]: Funds in FY 2018 are for the Government responsible portion for the shipbuilding construction contract overrun for DDG 116 ($19.4M), and for the Government responsible portion for the shipbuilding construction contract overrun for DDG 117, DDG 118, and DDG 120 ($31.9M). Funds in FY 2019 are for the Government responsible portion of the shipbuilding construction contract overrun for DDG 117, DDG 118, and DDG 120 ($54.0M).

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5300 / Completion of PY Shpbldg Progr	
ID Code (A=Service Ready, B=Not Service Ready): A	**Program Elements for Code B Items:** N/A	**Other Related Program Elements:** N/A
Line Item MDAP/MAIS Code: N/A		

[P5 / [3041] LHA(R)]: Funds in FY 2018 are for the Government responsible portion for the shipbuilding construction contract overrun for LHA 7 ($14.2M). Funds in FY 2019 are for the Government responsible portion of the shipbuilding construction contract overrun for LHA 7 ($25.1M).

[P5 / [5112] LCAC (Ship to Shore Connector)]: Funds in FY 2018 are for the Government responsible portion of the shipbuilding construction contract overrun for LCAC 101, 102, and 103 ($5.1M). Funds in FY 2019 are for the Government responsible portion of the shipbuilding construction contract overrun for LCAC 101, 102, and 103 ($9.4M).

[P5 / [5025] TAO Fleet Oiler]: Funds in FY 2019 are for Government Furnished Equipment (GFE) in Electronics and HM&E ($12.7M)and Change Orders for the T-AO 205 ($2.7M).

Exhibit P-40, Budget Line Item Justification: PB 2019 Navy	Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N: Shipbuilding and Conversion, Navy / BA 05: Auxiliaries, Craft, and Prior-Year Program Costs / BSA 1: Auxiliaries, Craft and Prior Yr Program Cost	**P-1 Line Item Number / Title:** 5300 / Completion of PY Shpbldg Progr

ID Code (A=Service Ready, B=Not Service Ready): A	Program Elements for Code B Items: N/A	Other Related Program Elements: N/A

Line Item MDAP/MAIS Code: N/A

Exhibits Schedule					Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Exhibit Type	Title*	Subexhibits	ID CD	MDAP/ MAIS Code	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*	Quantity / Total Cost *(Each) / ($ M)*
P-5	Ship Estimate				- / 0.000	- / 0.000	- / 117.542	- / 207.099	- / 0.000	- / 207.099
P-40	**Total Gross/Weapon System Cost**				**- / 0.000**	**- / 0.000**	**- / 117.542**	**- / 207.099**	**- / 0.000**	**- / 207.099**

*Title represents 1) the Number / Title for Items; 2) the Number / Title [DODIC] for Ammunition; and/or 3) the Number / Title (Modification Type) for Modifications.

Note: Totals in this Exhibit P-40 set may not be exact or sum exactly due to rounding.

Exhibit P-5, Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	**P-1 Line Item Number / Title:** 5300 / Completion of PY Shpbldg Progr	**Item Number / Title [DODIC]:** Ship Estimate
ID Code (A=Service Ready, B=Not Service Ready) :	**MDAP/MAIS Code:**	

Resource Summary	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Procurement Quantity *(Units in Each)*	-	-	-	-	-	-
Gross/Weapon System Cost *($ in Millions)*	0.000	0.000	117.542	207.099	0.000	207.099
Less PY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Net Procurement (P-1) *($ in Millions)*	0.000	0.000	117.542	207.099	0.000	207.099
Plus CY Advance Procurement *($ in Millions)*	-	-	-	-	-	-
Total Obligation Authority *($ in Millions)*	**0.000**	**0.000**	**117.542**	**207.099**	**0.000**	**207.099**
(The following Resource Summary rows are for informational purposes only. The corresponding budget requests are documented elsewhere.)						
Initial Spares *($ in Millions)*	-	-	-	-	-	-
Gross/Weapon System Unit Cost *($ in Millions)*	-	-	-	-	-	-

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*	Unit Cost *($ M)*	Qty *(Each)*	Total Cost *($ M)*
Completion of PY Shipbuilding Programs - [2127] Littoral Combat Ship (LCS) Cost																		
1.1) Government responsible portion of shipbuilding contract overrun for LCS 9 through LCS 12	-	-	-	-	-	-	-	-	6.394	-	-	-	-	-	-	-	-	-
1.2) Government responsible portion of shipbuilding contract overrun for LCS 17 through LCS 20	-	-	-	-	-	-	-	-	20.471	-	-	-	-	-	-	-	-	-
1.3) Government responsible portion of shipbuilding contract overrun for LCS 21, 22, 24	-	-	-	-	-	-	-	-	-	-	-	83.686	-	-	-	-	-	83.686
1.4) Government responsible portion of shipbuilding contract overrun for LCS 17 through LCS 20	-	-	-	-	-	-	-	-	-	-	-	19.498	-	-	-	-	-	19.498
Subtotal: Completion of PY Shipbuilding Programs - [2127] Littoral Combat Ship (LCS) Cost	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	***26.865***	**-**	**-**	***103.184***	**-**	**-**	**-**	**-**	**-**	***103.184***
Completion of PY Shipbuilding Programs - [2001] CVN (Carrier Replacement Program) Cost																		
2.1) Repairs to #1 Main Turbine Generator on CVN 78	-	-	-	-	-	-	-	-	20.000	-	-	-	-	-	-	-	-	-

Exhibit P-5, Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	P-1 Line Item Number / Title: 5300 / Completion of PY Shpbldg Progr	Item Number / Title [DODIC]: Ship Estimate
ID Code (A=Service Ready, B=Not Service Ready) :	MDAP/MAIS Code:	

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)
Subtotal: Completion of PY Shipbuilding Programs - [2001] CVN (Carrier Replacement Program) Cost	-	-	-	-	-	-	-	-	***20.000***	-	-	-	-	-	-	-	-	-
Completion of PY Shipbuilding Programs - [2122] DDG-51 Cost																		
3.1) Government responsible portion of shipbuilding contract overrun for DDG 116	-	-	-	-	-	-	-	-	19.436	-	-	-	-	-	-	-	-	-
3.2) Government responsible portion of shipbuilding contract overrun for DDG 117, 118 and 120	-	-	-	-	-	-	-	-	31.941	-	-	53.966	-	-	-	-	-	53.966
Subtotal: Completion of PY Shipbuilding Programs - [2122] DDG-51 Cost	-	-	-	-	-	-	-	-	***51.377***	-	-	***53.966***	-	-	-	-	-	***53.966***
Completion of PY Shipbuilding Programs - [3041] LHA(R) Cost																		
4.1) Government responsible portion of shipbuilding contract overrun for LHA 7	-	-	-	-	-	-	-	-	14.200	-	-	25.100	-	-	-	-	-	25.100
Subtotal: Completion of PY Shipbuilding Programs - [3041] LHA(R) Cost	-	-	-	-	-	-	-	-	***14.200***	-	-	***25.100***	-	-	-	-	-	***25.100***
Completion of PY Shipbuilding Programs - [5112] LCAC (Ship to Shore Connector) Cost																		
5.1) Government responsible portion of shipbuilding contract overrun for LCAC 101, 102, & 103	-	-	-	-	-	-	-	-	5.100	-	-	9.400	-	-	-	-	-	9.400
Subtotal: Completion of PY Shipbuilding Programs - [5112] LCAC (Ship to Shore Connector) Cost	-	-	-	-	-	-	-	-	***5.100***	-	-	***9.400***	-	-	-	-	-	***9.400***
Completion of PY Shipbuilding Programs - [5025] TAO Fleet Oiler Cost																		
6.1) Change Orders and Government Furnished Equipment (GFE) for T-AO 205	-	-	-	-	-	-	-	-	-	-	-	15.449	-	-	-	-	-	15.449
Subtotal: Completion of PY Shipbuilding Programs - [5025] TAO Fleet Oiler Cost	-	-	-	-	-	-	-	-	-	-	-	***15.449***	-	-	-	-	-	***15.449***

Exhibit P-5, Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation / Budget Activity / Budget Sub Activity: 1611N / 05 / 1	P-1 Line Item Number / Title: 5300 / Completion of PY Shpbldg Progr	Item Number / Title [DODIC]: Ship Estimate
ID Code (A=Service Ready, B=Not Service Ready) :		MDAP/MAIS Code:

Note: Subtotals or Totals in this Exhibit P-5 may not be exact or sum exactly due to rounding.

Cost Elements	Prior Years			FY 2017			FY 2018			FY 2019 Base			FY 2019 OCO			FY 2019 Total		
	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)	Unit Cost ($ M)	Qty (Each)	Total Cost ($ M)
Gross/Weapon System Cost	-	-	0.000	-	-	0.000	-	-	117.542	-	-	207.099	-	-	0.000	-	-	207.099