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Coast Guard Cutter Procurement: Background and Issues for Congress

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Summary

The Coast Guard's program of record (POR) calls for procuring 8 National Security Cutters (NSCs), 25 Offshore Patrol Cutters (OPCs), and 58 Fast Response Cutters (FRCs) as replacements for 90 aging Coast Guard high-endurance cutters, medium-endurance cutters, and patrol craft. The Coast Guard's proposed FY2021 budget requests a total of $597 million in procurement funding for the NSC, OPC, and FRC programs. It also proposes a rescission of $70 million in FY2020 procurement funding that Congress provided for the NSC program.

NSCs are the Coast Guard's largest and most capable general-purpose cutters; they are replacing the Coast Guard's 12 Hamilton-class high-endurance cutters. NSCs have an estimated average procurement cost of about $670 million per ship. Although the Coast Guard's POR calls for procuring 8 NSCs to replace the 12 Hamilton-class cutters, Congress through FY2020 has fully funded 11 NSCs, including the 10th and 11th in FY2018. In FY2020, Congress provided $100.5 million for procurement of long lead time materials (LLTM) for a 12th NSC, so as to preserve the option of procuring a 12th NSC while the Coast Guard evaluates its future needs. The funding can be used for procuring LLTM for a 12th NSC if the Coast Guard determines it is needed. The Coast Guard's proposed FY2021 budget requests $31 million in procurement funding for activities within the NSC program; this request does not include further funding for a 12th NSC. The Coast Guard's proposed FY2021 budget also proposes a rescission of $70 million of the $100.5 million that Congress provided for a 12th NSC, with the intent of reprogramming that funding to the Coast Guard's Polar Security Cutter (PSC) program. Eight NSCs have entered service; the seventh and eighth were commissioned into service on August 24, 2019. The 9th through 11th are under construction; the 9th is scheduled for delivery in 2020.

OPCs are to be less expensive and in some respects less capable than NSCs; they are intended to replace the Coast Guard's 29 aged medium-endurance cutters. Coast Guard officials describe the OPC and PSC programs as the service's highest acquisition priorities. OPCs have an estimated average procurement cost of about $411 million per ship. The first OPC was funded in FY2018. The Coast Guard's proposed FY2021 budget requests $546 million in procurement funding for the third OPC, LLTM for the fourth, and other program costs. On October 11, 2019, the Department of Homeland Security (DHS), of which the Coast Guard is a part, announced that DHS had granted extraordinary contractual relief to Eastern Shipbuilding Group (ESG) of Panama City, FL, the builder of the first four OPCs, under P.L. 85-804 as amended (50 U.S.C. 1431-1435), a law that authorizes certain federal agencies to provide certain types of extraordinary relief to contractors who are encountering difficulties in the performance of federal contracts or subcontracts relating to national defense. ESG reportedly submitted a request for extraordinary relief on June 30, 2019, after ESG's shipbuilding facilities were damaged by Hurricane Michael, which passed through the Florida panhandle on October 10, 2018. The Coast Guard intends to hold a competition for a contract to build OPCs 5 through 15.

FRCs are considerably smaller and less expensive than OPCs; they are intended to replace the Coast Guard's 49 aging Island-class patrol boats. FRCs have an estimated average procurement cost of about $65 million per boat. A total of 60 have been funded through FY2020, including four in FY2020. Four of the 60 are to be used by the Coast Guard in the Persian Gulf and are not counted against the Coast Guard's 58-ship POR for the program, which relates to domestic operations. Excluding these four FRCs, 56 FRCs for domestic operations have been funded through FY2020. The 36th FRC was commissioned into service on January 10, 2020. The Coast Guard's proposed FY2021 budget requests $20 million in procurement funding for the FRC program; this request does not include funding for any additional FRCs.

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Introduction

This report provides background information and potential oversight issues for Congress on the Coast Guard's programs for procuring 8 National Security Cutters (NSCs), 25 Offshore Patrol Cutters (OPCs), and 58 Fast Response Cutters (FRCs). The Coast Guard's proposed FY2021 budget requests a total of $597 million in procurement funding for the NSC, OPC, and FRC programs.

The issue for Congress is whether to approve, reject, or modify the Coast Guard's funding requests and acquisition strategies for the NSC, OPC, and FRC programs. Congress's decisions on these three programs could substantially affect Coast Guard capabilities and funding requirements, and the U.S. shipbuilding industrial base.

The NSC, OPC, and FRC programs have been subjects of congressional oversight for several years, and were previously covered in other CRS reports dating back to 1998 that are now archived.[1] CRS testified on the Coast Guard's cutter acquisition programs most recently in October and November of 2018.[2] The Coast Guard's plans for modernizing its fleet of polar icebreakers are covered in a separate CRS report.[3]

Background

Older Ships to Be Replaced by NSCs, OPCs, and FRCs

The 91 planned NSCs, OPCs, and FRCs are intended to replace 90 older Coast Guard ships—12 high-endurance cutters (WHECs), 29 medium-endurance cutters (WMECs), and 49 110-foot patrol craft (WPBs).[4] The Coast Guard's 12 Hamilton (WHEC-715) class high-endurance cutters entered service between 1967 and 1972.[5] The Coast Guard's 29 medium-endurance cutters included 13 Famous (WMEC-901) class ships that entered service between 1983 and 1991,[6] 14

[1] This CRS report was first published on June 13, 2012. The earlier CRS reports were Coast Guard Deepwater Acquisition Programs: Background, Oversight Issues, and Options for Congress, by Ronald O'Rourke (first version December 18, 2006, final [i.e., archived] version January 20, 2012); CRS Report RS21019, *Coast Guard Deepwater Program: Background and Issues for Congress, by Ronald O'Rourke* (first version September 25, 2001, final [i.e., archived] version December 8, 2006); and CRS Report 98-830 F, *Coast Guard Integrated Deepwater System: Background and Issues for Congress*, by Ronald O'Rourke (first version October 5, 1998, final [i.e., archived] version June 1, 2001). From the late 1990s until 2007, the Coast Guard's efforts to acquire NSCs, OPCs, and FRCs were parts of a larger, integrated Coast Guard acquisition effort aimed at acquiring several new types of cutters and aircraft that was called the Integrated Deepwater System (IDS) program, or Deepwater for short. In 2007, the Coast Guard broke up the Deepwater effort into a series of individual cutter and aircraft acquisition programs, but continued to use the term Deepwater as a shorthand way of referring collectively to these now-separated programs. In its FY2012 budget submission, the Coast Guard stopped using the term Deepwater as a way of referring to these programs.

[2] See CRS Testimony TE10030, *Icebreaker Acquisition and the Need for a National Maritime Strategy*, by Ronald O'Rourke, November 29, 2018, which includes discussions of the NSC, OPC, and FRC programs in Appendix E, and CRS Testimony TE10029, *Building the Fleets of the Future: Coast Guard and NOAA Fleet Recapitalization*, by Ronald O'Rourke, October 11, 2018.

[3] CRS Report RL34391, *Coast Guard Polar Security Cutter (Polar Icebreaker) Program: Background and Issues for Congress*, by Ronald O'Rourke.

[4] In the designations WHEC, WMEC, and WPB, W means Coast Guard ship, HEC stands for high-endurance cutter, MEC stands for medium-endurance cutter, and PB stands for patrol boat.

[5] Hamilton-class cutters are 378 feet long and have a full load displacement of about 3,400 tons.

[6] Famous-class cutters are 270 feet long and have a full load displacement of about 1,800 tons.

Reliance (WMEC-615) class ships that entered service between 1964 and 1969,[7] and 2 one-of-a-kind cutters that originally entered service with the Navy in 1944 and 1971 and were later transferred to the Coast Guard.[8] The Coast Guard's 49 110-foot Island (WPB-1301) class patrol boats entered service between 1986 and 1992.[9]

Many of these 90 ships are manpower-intensive and increasingly expensive to maintain, and have features that in some cases are not optimal for performing their assigned missions. Some of them have already been removed from Coast Guard service: 8 of the Island-class patrol boats were removed from service in 2007 following an unsuccessful effort to modernize and lengthen them to 123 feet; additional Island-class patrol boats are being decommissioned as new FRCs enter service; the one-of-a-kind medium-endurance cutter that originally entered service with the Navy in 1944 was decommissioned in 2011; and Hamilton-class cutters are being decommissioned as new NSCs enter service. A July 2012 Government Accountability Office (GAO) report discusses the generally poor physical condition and declining operational capacity of the Coast Guard's older high-endurance cutters, medium-endurance cutters, and 110-foot patrol craft.[10]

Missions of NSCs, OPCs, and FRCs

NSCs, OPCs, and FRCs, like the ships they are intended to replace, are to be multimission ships for routinely performing 7 of the Coast Guard's 11 statutory missions, including

- search and rescue (SAR);
- drug interdiction;
- migrant interdiction;
- ports, waterways, and coastal security (PWCS);
- protection of living marine resources;
- other/general law enforcement; and
- defense readiness operations.[11]

Smaller Coast Guard patrol craft and boats contribute to the performance of some of these seven missions close to shore. NSCs, OPCs, and FRCs perform them both close to shore and in the deepwater environment, which generally refers to waters more than 50 miles from shore.

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[7] Reliance-class cutters are 210 feet long and have a full load displacement of about 1,100 tons.

[8] These were the *Acushnet* (WMEC-167), which originally entered service with the Navy in 1944, and the *Alex Haley* (WMEC-39), which originally entered service with the Navy in 1971. The *Acushnet* served in the Navy from until 1946, when it was transferred to the Coast Guard. The ship was about 214 feet long and had a displacement of about 1,700 tons. The *Alex Haley* served in the Navy until 1996. It was transferred to the Coast Guard in 1997, converted into a cutter, and reentered service with the Coast Guard in 1999. It is 282 feet long and has a full load displacement of about 2,900 tons.

[9] Island-class boats are 110 feet long and have a full load displacement of about 135 to 170 tons.

[10] Government Accountability Office, *Coast Guard[:]Legacy Vessels' Declining Conditions Reinforce Need for More Realistic Operational Targets*, GAO-12-741, July 2012, 71 pp.

[11] The four statutory Coast Guard missions that are not to be routinely performed by NSCs, OPCs, and FRCs are marine safety, aids to navigation, marine environmental protection, and ice operations. These missions are performed primarily by other Coast Guard ships. The Coast Guard states, however, that "while [NSCs, OPCs, and FRCs] will not routinely conduct [the] Aids to Navigation, Marine Safety, or Marine Environmental Protection missions, they may periodically be called upon to support these missions (i.e., validate the position of an Aid to Navigation, transport personnel or serve as a Command and Control platform for a Marine Safety or Marine Environmental Response mission, etc.)." (Source: Coast Guard information paper provided to CRS on June 1, 2012.)

NSC Program

National Security Cutters (**Figure 1**)—also known as Legend (WMSL-750)[12] class cutters because they are being named for legendary Coast Guard personnel[13]—are the Coast Guard's largest and most capable general-purpose cutters.[14] They are larger and technologically more advanced than Hamilton-class cutters, and are built by Huntington Ingalls Industries' Ingalls Shipbuilding of Pascagoula, MS (HII/Ingalls).

Figure 1. National Security Cutter

Source: U.S. Coast Guard photo accessed May 2, 2012, at http://www.flickr.com/photos/coast_guard/5617034780/sizes/l/in/set-72157629650794895/.

[12] In the designation WMSL, W means Coast Guard ship and MSL stands for maritime security cutter, large.

[13] For a Coast Guard news release that mentions the naming rule for the class, see U.S. Coast Guard, "Acquisition Update: Keel Authenticated for the Fifth National Security Cutter," May 17, 2013.

[14] The NSC design is 418 feet long and has a full load displacement of about 4,500 tons. The displacement of the NSC design is about equal to that of Navy's now-retired Oliver Hazard Perry (FFG-7) class frigates, which were 453 feet long and had a full load displacement of about 4,200 tons. The Coast Guard's three polar icebreakers are much larger than NSCs, but are designed for a more specialized role of operations in polar waters. The Coast Guard states that

> The largest and most technologically advanced of the Coast Guard's newest classes of cutters, the NSCs replace the aging 378-foot high endurance cutters, which have been in service since the 1960s. Compared to legacy cutters, the NSCs' design provides better sea-keeping and higher sustained transit speeds, greater endurance and range, and the ability to launch and recover small boats from astern, as well as aviation support facilities and a flight deck for helicopters and unmanned aerial vehicles.
>
> ("National Security Cutter," accessed April 19, 2018, at https://www.dcms.uscg.mil/Our-Organization/Assistant-Commandant-for-Acquisitions-CG-9/Programs/Surface-Programs/National-Security-Cutter/.)

The Coast Guard's acquisition program of record (POR)—the service's list, established in 2004, of planned procurement quantities for various new types of ships and aircraft—calls for procuring 8 NSCs as replacements for the service's 12 Hamilton-class high-endurance cutters. The Coast Guard's FY2020 budget submission estimated the total acquisition cost of a nine-ship NSC program at $6.030 billion, or an average of about $670 million per ship.[15]

Although the Coast Guard's POR calls for procuring 8 NSCs to replace the 12 Hamilton-class cutters, Congress through FY2020 has fully funded 11 NSCs, including the 10th and 11th in FY2018. In FY2020, Congress provided $100.5 million for procurement of long lead time materials (LLTM) for a 12th NSC, so as to preserve the option of procuring a 12th NSC while the Coast Guard evaluates its future needs. The funding can be used for procuring LLTM for a 12th NSC if the Coast Guard determines it is needed. The Coast Guard's proposed FY2021 budget requests $31 million in procurement funding for activities within the NSC program; this request does not include further funding for a 12th NSC. The Coast Guard's proposed FY2021 budget also proposes a rescission of $70 million of the $100.5 million that Congress provided for a 12th NSC, with the intent of reprogramming that funding to the Coast Guard's Polar Security Cutter (PSC) program. The remaining $30.5 million would be used for procuring mission equipment for the 10th and 11th NSCs.[16]

Eight NSCs have entered service; the seventh and eighth were commissioned into service on August 24, 2019. The 9th through 11th are under construction; the 9th is scheduled for delivery in 2020. For additional information on the status and execution of the NSC program from a May 2018 GAO report, see **Appendix C**.

OPC Program

Overview

Coast Guard officials describe the Offshore Patrol Cutter program and the Coast Guard's Polar Security Cutter (PSC) program[17] as the service's two highest acquisition priorities. The Coast Guard's POR calls for procuring 25 OPCs as replacements for the service's 29 medium-endurance cutters. The first four ships in the OPC program are being built by Eastern Shipbuilding Group (ESG) of Panama City, FL.

OPCs (**Figure 2**, **Figure 3**, **Figure 4**, **Figure 5**, and **Figure 6**)—also known as Heritage (WMSM-915)[18] class cutters because they are being named for past cutters that played a significant role in the history of the Coast Guard and the Coast Guard's predecessor organizations[19]—are to be less expensive and in some respects less capable than NSCs.[20] OPCs

[15] Source: Coast Guard Five-Year (FY2020-FY2024) Capital Investment Plan (CIP) funding table for the Procurement, Construction and Improvements (PC&I) account.

[16] Source: Email from Coast Guard liaison office to CRS, February 26, 2020.

[17] For more on the PSC proram, see CRS Report RL34391, *Coast Guard Polar Security Cutter (Polar Icebreaker) Program: Background and Issues for Congress*, by Ronald O'Rourke.

[18] In the designation WMSM, W means Coast Guard ship and MSM stands for maritime security cutter, medium.

[19] For the naming rule for the class and a list of the names of the first 11 OPCs, see U.S. Coast Guard, "The Offshore Patrol Cutter (OPC) Is The Coast Guard's Highest Investment Priority and Will Play A Critical Role in the Service's Future," undated, accessed August 15, 2017, at http://www.dcms.uscg.mil/Our-Organization/Assistant-Commandant-for-Acquisitions-CG-9/Newsroom/OPC_Day/. See also Sam LaGrone, "Coast Guard Celebrates Birthday by Naming 11 Planned Offshore Patrol Cutters," *USNI News*, August 4, 2017 (updated August 5, 2017).

[20] The service states that OPCs

are to have a length of 360 feet, which will make them about 86% as long as NSCs, which have a length of 418 feet. OPCs were earlier estimated to have a full load displacement of 3,500 tons to 3,730 tons, which would have made them about 80% as large in terms of full load displacement as NSCs, which have a full load displacement of about 4,500 tons[21] As the OPC design has matured, however, its estimated displacement has grown to about 4,500 tons, making it essentially as large as the NSC in terms of full load displacement.[22]

Figure 2. Offshore Patrol Cutter

Artist's rendering

Source: Photograph accompanying Kirk Moore, "Coast Guard's Birthday Present: Naming the Next Cutters," *WorkBoat*, August 4, 2017. A caption to the rendering credits the rendering to Eastern Shipbuilding Group.

> The OPCs will provide the majority of offshore presence for the Coast Guard's cutter fleet, bridging the capabilities of the 418-foot national security cutters, which patrol the open ocean, and the 154-foot fast response cutters, which serve closer to shore. The OPCs will conduct missions including law enforcement, drug and migrant interdiction, search and rescue, and other homeland security and defense operations. Each OPC will be capable of deploying independently or as part of task groups and serving as a mobile command and control platform for surge operations such as hurricane response, mass migration incidents and other events. The cutters will also support Arctic objectives by helping regulate and protect emerging commerce and energy exploration in Alaska.
>
> ("Offshore Patrol Cutter," accessed April 20, 2018, https://www.dcms.uscg.mil/Our-Organization/Assistant-Commandant-for-Acquisitions-CG-9/Programs/Surface-Programs/Offshore-Patrol-Cutter/Offshore-Patrol-Cutter-Program-Profile/.)

[21] As of May 26, 2017, the OPC's light ship displacement (i.e., its "empty" displacement, without fuel, water, ballast, stores, and crew) was preliminarily estimated at about 2,640 to 2,800 tons, and its full load displacement was preliminarily estimated at about 3,500 to 3,730 tons. (Source: Figures provided to CRS by Cost Guard liaison office, May 26, 2017.) In terms of full load displacement, this would have made OPCs roughly 80% as large as NSCs.

[22] Source: Email from Coast Guard liaison office to CRS, November 25, 2019. See also **Figure 6**.

Figure 3. Offshore Patrol Cutter

Artist's rendering

Source: "Offshore Patrol Cutter Notional Design Characteristics and Performance," accessed September 16, 2016, at https://www.dcms.uscg.mil/Portals/10/CG-9/Surface/OPC/OPC%20Placemat%2036x24.pdf?ver=2018-10-02-134225-297.

Figure 4. Offshore Patrol Cutter

Artist's rendering

Source: Eastern Shipbuilding Group (http://www.easternshipbuilding.com/), accessed September 9, 2019.

The Coast Guard's FY2020 budget submission estimated the total acquisition cost of the 25 ships at $10.270 billion, or an average of about $411 million per ship.[23] The first OPC was funded in FY2018. The Coast Guard's proposed FY2021 budget requests $546 million in procurement funding for the third OPC, LLTM for the fourth, and other program costs.

[23] Source: Coast Guard Five-Year (FY2020-FY2024) Capital Investment Plan (CIP) funding table for the Procurement, Construction and Improvements (PC&I) account.

Figure 5. Offshore Patrol Cutter

Artist's rendering

Source: Image received from Coast Guard liaison office, May 25, 2017.

The Coast Guard's Request for Proposal (RFP) for the OPC program, released on September 25, 2012, established an affordability requirement for the program of an average unit price of $310 million per ship, or less, in then-year dollars (i.e., dollars that are not adjusted for inflation) for ships 4 through 9 in the program.[24] This figure represents the shipbuilder's portion of the total cost of the ship; it does not include the cost of government-furnished equipment (GFE) on the ship,[25] or other program costs—such as those for program management, system integration, and logistics—that contribute to the above-cited figure of $411 million per ship.[26]

Competition and September 2016 Contract Award

In response to the September 25, 2012, RFP, at least eight shipyards expressed interest in the OPC program.[27] On February 11, 2014, the Coast Guard announced that it had awarded Preliminary

[24] Source: Section C.5 of the RFP, accessed October 31, 2012, at http://www.uscg.mil/ACQUISITION/newsroom/updates/opc092512.asp.

[25] GFE is equipment that the government procures and then delivers to the shipyard for installation on the ship.

[26] Source: Coast Guard emails to CRS dated June 25, 2013.

[27] The firms were the following: Bollinger Shipyards of Lockport, LA; Eastern Shipbuilding Group of Panama City, FL; General Dynamics Bath Iron Works (GD/BIW) of Bath, ME; Huntington Ingalls Industries (HII) of Pascagoula, MS; Marinette Marine Corporation of Marinette, WS; General Dynamics National Steel and Shipbuilding Company (GD/NASSCO) of San Diego, CA; Vigor Shipyards of Seattle, WA; and VT Halter Marine of Pascagoula, MS. (Source: U. S. Coast Guard Offshore Patrol Cutter (OPC) List of Interested Contractors Updated July 2012, accessed online October 23, 2012, at http://www.uscg.mil/ACQUISITION/opc/pdf/companiesinterested.pdf; and Kevin Brancato and Anne Laurent, *Coast Guard's $12 Billion Cutter Competition Spurs Eight Shipyards to Dive In*,

and Contract Design (P&CD) contracts to three of those eight firms—Bollinger Shipyards of Lockport, LA; Eastern Shipbuilding Group (ESG) of Panama City, FL; and General Dynamics' Bath Iron Works (GD/BIW) of Bath, ME.[28]

On September 15, 2016, the Coast Guard announced that it had awarded the detail design and construction (DD&C) contract to ESG. The contract covered detail design and production of up to 9 OPCs and had a potential value of $2.38 billion if all options were exercised.[29]

October 2019 Announcement of Contractual Relief and Follow-on Competition

On October 11, 2019, the Department of Homeland Security (DHS), of which the Coast Guard is a part, announced that DHS had granted extraordinary contractual relief to ESG under P.L. 85-804 as amended (50 U.S.C. 1431-1435), a law originally enacted in 1958 that authorizes certain federal agencies to provide certain types of extraordinary relief to contractors who are encountering difficulties in the performance of federal contracts or subcontracts relating to national defense.[30]

Bloomberg Government Study, November 8, 2012, 6 pp. The Coast Guard document states that these firms "expressed interest in the Offshore Patrol Cutter acquisition and have agreed to their names provided on the Coast Guard website." See also Stew Magnuson, "New Coast Guard Cutter Sparks Fierce Competition Among Shipbuilders," *National Defense* (*www.nationaldefensemagazine.org*), April 2013, accessed March 26, 2013, at http://www.nationaldefensemagazine.org/articles/2013/4/1/2013april-new-coast-guard-cutter-sparks-fierce-competition-among-shipbuilders.)

[28] "Acquisition Update: U.S. Coast Guard Awards Three Contracts for Offshore Patrol Cutter Preliminary and Contract Design," February 11, 2014, accessed February 14, 2014, at https://www.dcms.uscg.mil/Portals/10/CG-9/Newsroom/In%20The%20News%20Archives/2014/opc021114.pdf?ver=2017-05-23-145011-727. HII and VT Halter Marine reportedly filed protests of the Coast Guard's award decision on February 24 and 25, respectively. The Coast Guard issued stop work orders to Bollinger, Eastern, and GD/BIW pending GAO's rulings on the protests. (Calvin Biesecker, "Coast Guard Issues Stop Work Orders On OPC Following Protests," *Defense Daily*, February 28, 2014: 2-3. See also Christopher P. Cavas, "Ingalls Protesting US Coast Guard Cutter Contract," *DefenseNews.com*, February 26, 2014.) On June 5, 2014, it was reported that GAO had rejected the protests, and that the Coast Guard had directed Bollinger, Eastern, and GD/BIW to resume their work. (Calvin Biesecker, "Coast Guard Directs Design Work Continue On OPC After GAO Denies Protests," *Defense Daily*, June 5, 2014: 1; Christopher P. Cavas, "US Coast Guard Cutter Award Upheld," *Defense News* (http://www.defensenews.com), June 5, 2014. For the text of the decision, see Government Accountability Office, Decision in the Matter of Huntington Ingalls Industries, Inc.; VT Halter Marine, Inc., June 2, 2014.)

[29] "Acquisition Update: Coast Guard Selects Offshore Patrol Cutter Design," September 15, 2016; "Acquisition Update: Coast Guard Moves Forward To Next Phase Of OPC Acquisition," October 5, 2016. See also "Coast Guard Exercises Long Lead Time Materials Option For First Offshore Patrol Cutter," September 7, 2017.

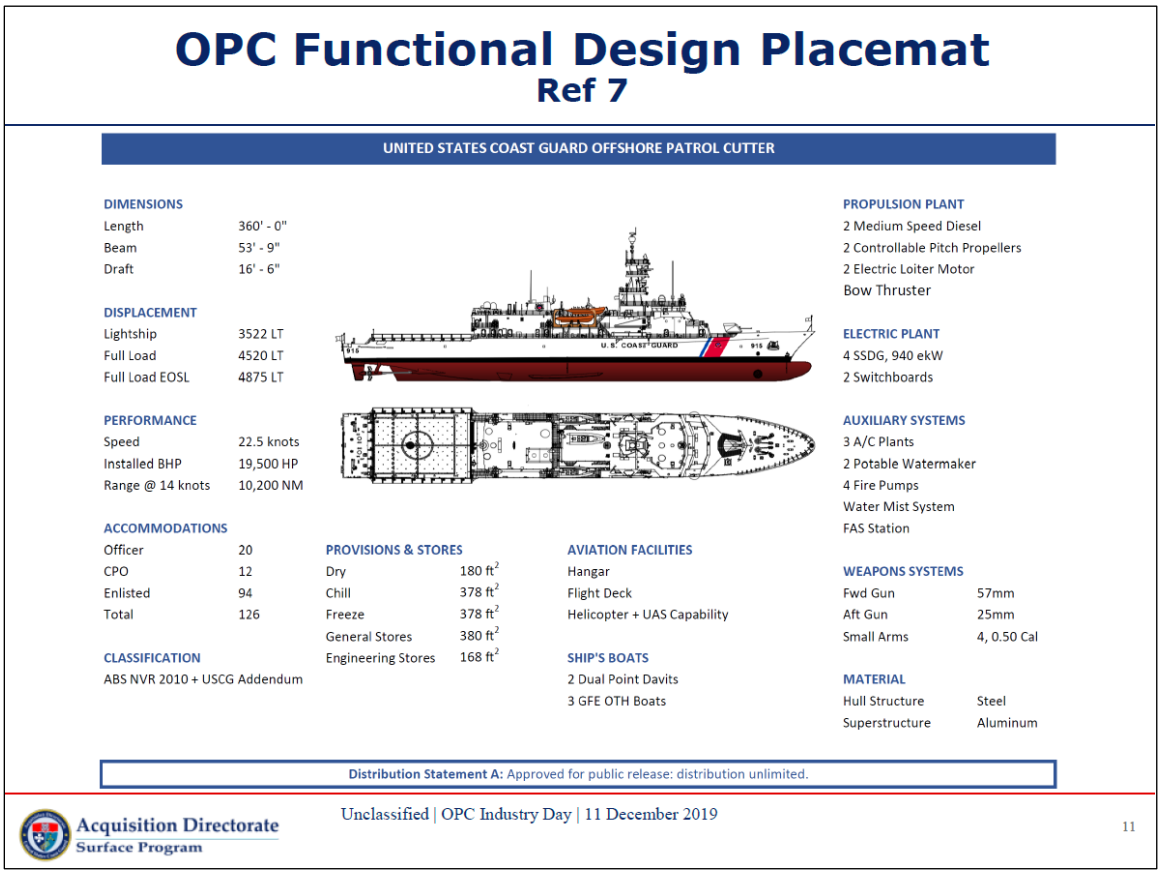
[30] 50 U.S.C. 1431 states in part

> The President may authorize any department or agency of the Government which exercises functions in connection with the national defense, acting in accordance with regulations prescribed by the President for the protection of the Government, to enter into contracts or into amendments or modifications of contracts heretofore or hereafter made and to make advance payments thereon, without regard to other provisions of law relating to the making, performance, amendment, or modification of contracts, whenever he deems that such action would facilitate the national defense. The authority conferred by this section shall not be utilized to obligate the United States in an amount in excess of $50,000 without approval by an official at or above the level of an Assistant Secretary or his Deputy, or an assistant head or his deputy, of such department or agency, or by a Contract Adjustment Board established therein.

For more on P.L. 85-804 as amended, see CRS Report 76-261, *Extraordinary Contractual Relief Under Public Law 85-804*, April 28, 1976, by Andrew C. Mayer. The report was prepared at the request of the House Armed Services Committee and converted by the committee into a committee print (70-905 O), dated May 10, 1976, that can be viewed at https://ufdc.ufl.edu/AA00022546/00001/1j. See also David H. Peirez, "Public Law 85-804: Contractual Relief for the Government Contractor," *Administrative Law Review*, Vol. 16 (Summer 1964): 248-264, accessed October 11, 2019, at

Figure 6. OPC Functional Design

"Placemat" summary from Coast Guard



Source: Slide 11 from Coast Guard presentation at OPC Industry Day, December 11, 2019, updated December 13, 2019, accessed December 17, 2019, at https://beta.sam.gov/opp/bf0b9b0a1fe2428e9a73043259641c13/view.

ESG reportedly submitted a request for extraordinary relief on June 30, 2019, after ESG's shipbuilding facilities were damaged by Hurricane Michael, which passed through the Florida panhandle on October 10, 2018. The Coast Guard announced that the contractual relief is limited to the first four hulls in the OPC program. DHS stated that the Coast Guard would immediately transition to conducting a follow-on competition for subsequent ships in the OPC program,[31] identified later as ships 5 through 15 in the program. Under P.L. 85-804 as amended, Congress had 60 days of continuous session to review the announced contractual relief, with the 60-day period in this case starting October 11.[32]

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https://www.jstor.org/stable/40708469; and "Presidential Power: Public Law 85-804 (50 U.S.C. §§ 1431-35)," Brennan Center for Justice, undated, accessed October 11, 2019, at https://www.brennancenter.org/sites/default/files/analysis/50%20USC%201431-1435.pdf. (Although it is undated, it appears to have been written no earlier than 2014, as it includes three references to the year 2014, including one that states, "As of 2014….") The text of P.L. 85-804 as originally enacted is posted at https://www.govinfo.gov/content/pkg/STATUTE-72/pdf/STATUTE-72-Pg972.pdf.

[31] Department of Homeland Security, "DHS Extends Contract Relief for Offshore Patrol Cutter," October 11, 2019; U.S. Coast Guard, "Department of Homeland Security Approves Limited Extraordinary Relief for Offshore Patrol Cutter Contract," October 11, 2019; "DHS, Coast Guard Extend Limited Contract Relief for Offshore Patrol Cutter," *Coast Guard News (coastguardnews.com)*, October 11, 2019.

[32] 50 U.S.C. 1431 states in part

January 2020 RFP for Industry Studies Regarding Follow-On Competition

On January 10, 2020, the Coast Guard released a request for proposals (RFP) for industry studies in connection with its intended follow-on competition for ships 5 through 15 in the OPC program. Responses to the RFP were due by January 31, 2020.

The RFP posting includes an attached notional timeline for the follow-on effort. Under this notional timeline, the contracts for industry studies are to be awarded in early March 2020, and the studies are to be completed by October 10, 2020. A draft RFP for the detail design and construction (DD&C) contract for ships 5 through 15 is to be released around July 31, 2020; the final RFP is to be released around October 10, 2020; and proposals under the RFP are to be submitted by a date late in the third quarter of FY2021.

Under the Coast Guard's notional timeline, the DD&C contract is to be awarded on January 30, 2022. Ships 1 through 7 in the 25-ship program are to be built at a rate of one per year, with OPC-1 completing construction in FY2022 and OPC-7 completing construction in FY2028. The remaining 18 ships are to be built at a rate of two per year, with OPC-8 completing construction in FY2029 and OPC-25 completing construction in FY2038. These dates are generally 10 months to about 2 years later than they would have been under the Coast Guard's previous (i.e., pre-October 11, 2019) timeline for the OPC program.[33]

Under the new notional timeline, the Coast Guard's 14 Reliance-class 210-foot medium-endurance cutters would be replaced when they would be (if still in service) about 54 to 67 years old, and the Coast Guard's 13 Famous-class 270-foot medium-endurance cutters would be replaced when they would be (if still in service) about 42 to 52 years old.[34]

> The authority conferred by this section may not be utilized to obligate the United States in any amount in excess of $25,000,000 unless the Committees on Armed Services of the Senate and the House of Representatives have been notified in writing of such proposed obligation and 60 days of continuous session of Congress have expired following the date on which such notice was transmitted to such Committees. For purposes of this section, the continuity of a session of Congress is broken only by an adjournment of the Congress sine die at the end of a Congress, and the days on which either House is not in session because of an adjournment of more than 3 days to a day certain, or because of an adjournment sine die other than at the end of a Congress, are excluded in the computation of such 60-day period

[33] Source for ships 1-4: An October 15, 2019, press report states

> Under the new plan, the Coast Guard intends for Eastern Shipbuilding Group (ESG) to build up to four OPCs rather than the minimum of nine contracted for a year ago, with the first ship now delayed 10 to 12 months and the three subsequent ships about nine to 10 months each from that point, Shultz said at an event hosted by the Center for Strategic and International Studies. Delivery of the first OPC, which began construction in January, has been pushed back to 2022.
>
> (Cal Biesecker, "Decision To Reopen OPC Competition Will Stretch Out Acquisition," *Defense Daily*, October 15, 2019. See also Gina Harkins, "Despite Hurricane Damage, Coast Guard Pressing On with Next-Gen Cutter Construction," *Military.com*, October 15, 2019; Ben Werner, "Coast Guard Seeks To Bring Bidders Onto Modified Offshore Patrol Cutter Contract," *USNI News*, October 15, 2019.)

Source for ships 5 through 25: CRS comparison of notional timeline's completion dates with those shown in Figure 4 on page 17 of Government Accountability Office, *Coast Guard Recapitalization[:] Matching Needs and Resources Continue to Strain Acquisition Efforts*, GAO-17-654 T, June 7, 2017. (Testimony Before the Subcommittee on Coast Guard and Maritime Transportation, Committee on Transportation and Infrastructure, House of Representatives, Statement of Marie A. Mak, Director, Acquisition and Sourcing Management.)

[34] Source: CRS estimate based on replacement sequence shown in Government Accountability Office, *Coast Guard Recapitalization[:] Matching Needs and Resources Continue to Strain Acquisition Efforts*, GAO-17-654 T, June 7, 2017. (Testimony Before the Subcommittee on Coast Guard and Maritime Transportation, Committee on

An October 18, 2019, Coast request for information (RFI) for the follow-on effort stated that "it is assumed that Shipbuilders would utilize the mature parts of the existing OPC functional design—to the maximum extent possible—and mature any incomplete aspects of the [OPC] detail design." This suggests that the Coast Guard envisioned that the fifth and subsequent OPCs would be built to a design that is largely similar to that of ESG's design for the first four OPCs.

For additional general information on the status and execution of the OPC program from a May 2018 GAO report, see **Appendix C**. For additional background information on the impact of Hurricane Michael on the OPC program at ESG, see **Appendix E**. For the text of a November 25, 2019, letter to the Acting Secretary of DHS from the Chair and Ranking Member of the House Transportation and Infrastructure Committee and the Chair and Ranking Member of that committee's Coast Guard and Maritime Transportation subcommittee regarding the restructuring of the OPC program under P.L. 85-804, see **Appendix F**.

FRC Program

Fast Response Cutters (**Figure 7**)—also called Sentinel (WPC-1101)[35] class patrol boats because they are being named for enlisted leaders, trailblazers, and heroes of the Coast Guard and its predecessor services of the U.S. Revenue Cutter Service, U.S. Lifesaving Service, and U.S. Lighthouse Service[36]—are considerably smaller and less expensive than OPCs, but are larger than the Coast Guard's older patrol boats.[37] FRCs are built by Bollinger Shipyards of Lockport, LA.

The Coast Guard's POR calls for procuring 58 FRCs as replacements for the service's 49 Island-class patrol boats.[38] The POR figure of 58 FRCs is for domestic operations. The Coast Guard, however, operates six Island-class patrol boats in the Persian Gulf area as elements of a Bahrain-based Coast Guard unit, called Patrol Forces Southwest Asia (PATFORSWA), which is the Coast Guard's largest unit outside the United States.[39] Providing FRCs as one-for-one replacements for

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Transportation and Infrastructure, House of Representatives, Statement of Marie A. Mak, Director, Acquisition and Sourcing Management.)

[35] In the designation WPC, W means Coast Guard ship and PC stands for patrol craft.

[36] Source for class naming rule: U.S. Coast Guard bulletin, "ALCOAST 349/17 - Nov 2017 New Fast Response Cutters Named for Coast Guard heroes," November 22, 2017, accessed November 20, 2017, at https://content.govdelivery.com/accounts/USDHSCG/bulletins/1c6c844.

[37] FRCs are 154 feet long and have a full load displacement of 353 tons.

[38] The Coast Guard states that

> The planned fleet of FRCs will conduct primarily the same missions as the 110' patrol boats being replaced. In addition, the FRC will have several increased capabilities enhancing overall mission execution. The FRC is designed for rapid response, with approximately a 28 knot speed capability, and will typically operate in the coastal zones. Examples of missions that FRCs will complete include SAR, Migrant Interdiction, Drug Interdiction and Ports Waterways and Coastal Security.
>
> FRCs will provide enhanced capabilities over the 110's including improved C4ISR capability and interoperability; stern launch and recovery (up through sea state 4) of a 40 knot, Over-the-Horizon, 7m cutter boat; a remote operated, gyro stabilized MK38 Mod 2, 25mm main gun; improved sea keeping; and enhanced crew habitability.
>
> (*Department of Homeland Security, United States Coast Guard, Fiscal Year 2013 Congressional Justification*, p. CG-AC&I-28 (pdf page 182 of 400).)

[39] For additional information on PATFORSWA, see U.S. Coast Guard, "Patrol Forces Southwest Asia, PATFORSWA," accessed April 24, 2019, at https://www.atlanticarea.uscg.mil/Our-Organization/Area-Units/PATFORSWA/, U.S. Coast Guard, "CG Patrol Forces SWA Org Chart," accessed April 24, 2019, at https://www.atlanticarea.uscg.mil/Our-Organization/Area-Units/PATFORSWA/Departments/; Edward H. Lundquist, "PATFORSWA Serves Forward in the Arabian Gulf," *Defense Media Network*, March 19, 2018; Eric D. Nielsen (posted by Connie Terrell), "PATFORSWA: Guardians of the Arabian Gulf," *Coast Guard Compass*, August 22, 2016.

all six of the Island-class patrol boats in PATFORSWA would result in a combined POR+PATFORSWA figure of 64 FRCs.

Figure 7. Fast Response Cutter

With an older Island-class patrol boat behind

Source: U.S. Coast Guard photo accessed May 4, 2012, at http://www.flickr.com/photos/coast_guard/6871815460/sizes/l/in/set-72157629286167596/.

The Coast Guard's FY2020 budget submission estimated the total acquisition cost of the 58 cutters at $3.748.1 billion, or an average of about $65 million per cutter.[40] A total of 60 have been funded through FY2020, including four in FY2020. Four of the 60 are to be used by the Coast Guard in the Persian Gulf and are not counted against the Coast Guard's 58-ship POR for the program, which relates to domestic operations. Excluding these four FRCs, 56 FRCs for domestic operations have been funded through FY2020. The 36th FRC was commissioned into service on January 10, 2020.

The Coast Guard's proposed FY2021 budget requests $20 million in procurement funding for the FRC program; this request does not include funding for any additional FRCs.

For additional information on the status and execution of the FRC program from a May 2018 GAO report, see **Appendix C**.

[40] Source: Coast Guard Five-Year (FY2020-FY2024) Capital Investment Plan (CIP) funding table for the Procurement, Construction and Improvements (PC&I) account.

Funding in FY2013-FY2021 Budget Submissions

Table 1 shows annual requested and programmed acquisition funding for the NSC, OPC, and FRC programs in the Coast Guard's FY2013-FY2021 budget submissions. Actual appropriated figures differ from these requested and projected amounts.

Table 1. NSC, OPC, and FRC Funding in FY2013-FY2021 Budget Submissions

Figures in millions of then-year dollars

Budget	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
NSC program													
FY13	683	0	0	0	0								
FY14		16	710	38	0	45							
FY15			638	75	130	30	47						
FY16				91.4	132	95	30	15					
FY17					127	95	65	65	21				
FY18						54	65	65	21	6.6			
FY19							65	57.7	21	6.6	0		
FY20								60	21	6.6	5	5	
FY21									31	n/a	n/a	n/a	n/a
OPC program													
FY13	30	50	40	200	530								
FY14		25	65	200	530	430							
FY15			20	90	100	530	430						
FY16				18.5	100	530	430	430					
FY17					100	530	430	530	770				
FY18						500	400	457	716	700			
FY19							400	457	716	700	689		
FY20								457	716	700	689	715	
FY21									546	n/a	n/a	n/a	n/a
FRC program													
FY13	139	360	360	360	360								
FY14		75	110	110	110	110							
FY15			110	340	220	220	315						
FY16				340	325	240	240	325					
FY17					240	240	325	325	18				
FY18						240	335	335	26	18			
FY19							240	340	20	20	20		
FY20								140	20	20	20	20	
FY21									20	n/a	n/a	n/a	n/a
Total													
FY13	852	410	400	560	890								
FY14		716	885	348	640	585							
FY15			768	505	450	780	792						
FY16				449.9	557	865	700	370					
FY17					467	865	820	920	809				
FY18						794	800	857	763	724.6			
FY19							705	854.7	757	726.6	709		
FY20								657	757	726.6	714	740	
FY21									597	n/a	n/a	n/a	n/a

Source: Table prepared by CRS based on FY2013-FY2021 budget submissions. n/a means not available.

Issues for Congress

Procurement Funding for 12th NSC

One issue for Congress concerns procurement funding for a 12th NSC—whether to approve, reject, or modify the Coast Guard's proposed rescission of $70 million of the $101.5 million in FY2020 procurement funding that Congress provided for purchasing LLTM for a 12th NSC (with the intent of reprogramming that $70 million to the PSC program), and whether to provide any further procurement funding in FY2021 for a 12th NSC. Both of these questions relate to the issue of whether to procure a 12th NSC.

Supporters of procuring a 12th NSC could argue that a total of 12 NSCs would provide one-for-one replacements for the 12 retiring Hamilton-class cutters; that Coast Guard analyses showing a need for no more than 9 NSCs assumed dual crewing of NSCs—something that has not worked as well as expected; that the Coast Guard's POR record includes only about 61% as many new cutters as the Coast Guard has calculated would be required to fully perform the Coast Guard's anticipated missions in coming years;[41] that the Coast Guard has recently begun to place more emphasis on deploying cutters the Western Pacific—an action that could increase demands for NSCs beyond what the Coast Guard anticipated when it established its program of record in 2004; and that the increase in the estimated displacement of the OPC to 4,500 tons—a figure about equal to the displacement of NSCs—makes procuring additional NSCs more suitable as a near-term measure for responding to potential delays in the restructured OPC program.

Skeptics or opponents of procuring a 12th NSC could argue that the Coast Guard's POR includes only 8 NSCs; that the Coast Guard's fleet mix analyses (see **Appendix A**) have not shown a potential need for more than 9 NSCs; that the Coast Guard intends to move expeditiously to proceed with its restructured effort to procure OPCs; and that in a situation of finite Coast Guard budgets, procuring a 12th NSC might reduce funding available for other Coast Guard programs, including the PSC program.

Number of FRCs to Procure in FY2021

Another issue for Congress concerns whether to approve the Coast Guard's proposal to procure no FRCs in FY2021, or instead procure some number of FRCs, such as two (which would be enough to either complete the program of record's goal of 58 FRCs for domestic operations, or to provide one-for-one replacements for all six of the Island-class patrol boats that the Coast Guard operates in the Persian Gulf), or four (which would be enough to do both of these things).

Supporters of the Coast Guard's proposal to procure no FRCs in FY2021 could argue that in a situation of finite Coast Guard funding, procuring additional FRCS in FY2021 could reduce funding for other Coast Guard programs, including the OPC and PSC programs, and that even if no FRCs are procured in FY2021, additional FRCs could still be procured in FY2022 or subsequent years.

Supporters of procuring two or four (or some other number of) FRCs in FY2021 could argue that this could complete the FRC's 58-shp program of record goal for domestic use, and/or replace all six of the Coast Guard's Island-class patrol boats in the Persian Gulf. They could argue that waiting until FY2022 or a subsequent fiscal year to procure these FRCs would increase their cost

[41] See "Planned NSC, OPC, and FRC Procurement Quantities" below, as well as **Appendix A**.

by creating a break in the shipyard's production learning curve for building the boats and incurring other program stop-and-restart costs.

Procurement Cost and Cost Effectiveness of OPCs 1 Through 4

Another potential oversight issue for Congress concerns how, if at all, the estimated procurement cost of the first four OPCs has changed as a result of the contractual relief the Coast Guard has provided to ESG under P.L. 85-804, and what implications, if any, such cost growth might have regarding the cost effectiveness of building each of these four cutters.

A November 25, 2019, letter to the Acting Secretary of DHS from the Chair and Ranking Member of the House Transportation and Infrastructure Committee and the Chair and Ranking Member of that committee's Coast Guard and Maritime Transportation subcommittee regarding the OPC program (see **Appendix F**) states that under the Coast Guard's plan for providing contractual relief under P.L. 85-804, DHS and the Coast Guard plan to "spend up to an additional $659 million to complete those [four] cutters…." A figure of $659 million, if applied to the procurement cost of the first four OPCs, would equate to an average increase of about $165 million per ship, which would be an increase of roughly 40% above the $411 million average cost for each of 25 OPCs as estimated under the Coast Guard's FY2020 budget submission. Potential oversight questions for Congress include the following:

- What was the estimated procurement cost for each of the first four OPCs under the Coast Guard's FY2020 budget submission, and what is the estimated procurement cost for each of the first four OPCs under the Coast Guard's FY2021 budget submission?
- To the extent that the estimated costs for any of these four OPCs is higher in the Coast Guard's FY2021 budget submission than it is in the Coast Guard's FY2020 budget submission, what portion of the increase reflects the contractual relief that the Coast Guard is providing under P.L. 85-804?
- How cost-effective is it to build each of these first four OPCs at their new estimated procurement costs, relative to potential alternatives such as procuring up to four additional NSCs, or up to four more of the OPCs that are to be built under the follow-on OPC construction contract that the Coast Guard intends to compete and award?
- What potential, if any, is there for further cost growth on the first four OPCs?
- At what procurement cost would one or more of these first four OPCs no longer be cost effective to procure, relative to the potential alternatives mentioned above?

Contractual Relief and Follow-on Competition for OPC Program

More generally, the Coast Guard's proposed course of action for the OPC program raises a number of potential oversight questions for Congress, including those below.

Overall Course of Action

Potential oversight questions relating to the announced overall course of action include but are not necessarily limited to the following:

- What potential overall courses of action did DHS and the Coast Guard examine for responding to the situation at ESG created by Hurricane Michael? For

example, did DHS and the Coast Guard examine the option of immediately terminating the OPC contract, paying ESG any resulting contract-termination costs, and conducting a new competition to build OPCs starting with the first ship in the program? Alternatively, for example, did DHS and the Coast Guard examine the option of providing contractual relief to ESG under P.L. 85-804 as amended while maintaining the plan to build up to nine OPCs at ESG? What other potential overall courses of action were examined?

- What were the potential advantages and disadvantages of these and other potential overall courses of action?
- Why does DHS believe that the best overall course of action is to provide extraordinary contractual relief for a limited number of OPCs under P.L. 85-804 as amended and then conduct a follow-on competition for the remaining ships in the OPC program?
- What impact, if any, does the announced overall course of action for the OPC program have on the issue discussed in the next section regarding funding for a 12th National Security Cutter (NSC)?

Contractual Relief

Potential oversight questions relating to specifically the contractual relief include but are not necessarily limited to the following:

- Why is ESG being granted financial and other contractual relief as a consequence of hurricane damage, when hurricanes are a known risk for communities on the Gulf Coast? Did ESG have insurance covering hurricane damage? If so, how much coverage did ESG have, and what payments did the insurance firm make to ESG? If ESG did not have insurance covering hurricane damage, why not?
- Following Hurricane Katrina in 2005, Congress provided $1.7 billion in reallocated emergency supplemental appropriations to pay estimated higher shipbuilding costs for 11 Navy ships under construction at the Ingalls shipyard in Pascagoula, MS, and the Avondale shipyard upriver from New Orleans, LA.[42] In what ways is that relief similar to or different from the relief being provided to ESG under P.L. 85-804 following Hurricane Michael? If financial relief for hurricane damage was provided to the Ingalls and Avondale shipyards, why should it not also be provided to ESG? By providing relief to Gulf Coast

[42] See CRS Report RS22239, *Emergency Supplemental Appropriations for Hurricane Katrina Relief*, by Keith Bea, August 22, 2006, p. 6. The report states

> Citing the need for "special oversight" of these shipbuilding funds dedicated to cover property damage, cleanup, idle payroll, and business disruption (that may also be covered by shipbuilders' insurance), the appropriators added report language requiring that the Navy or Army, as applicable, submit a report to the Appropriations Committees "certifying" that the costs were related to the hurricanes and would not be paid for by FEMA or the shipbuilders' insurers.
>
> (U.S. House, Conference Committees 2005, *Making Appropriations for the Department of Defense for the Fiscal Year Ending September 30, 2006, and for Other Purposes*, conference report to accompany H.R. 2863, H.Rept. 109-359, 109th Cong., 1st sess. (Washington: GPO, 2005), p. 496.)

See also CRS Report RL33298, *FY2006 Supplemental Appropriations: Iraq and Other International Activities; Additional Hurricane Katrina Relief*, Paul M. Irwin, Coordinator, Larry Nowels, Coordinator, June 15, 2006, pp. 59-66; and CRS Report RL33197, *Reallocation of Hurricane Katrina Emergency Appropriations: Defense and Other Issues*, Coordinated by Amy Belasco, December 15, 2005, pp. 9-14. (These CRS reports are out of print and available for congressional clients from the author of this report.)

shipyards for hurricane damage, is the government creating a moral hazard that encourages Gulf Coast shipyards to reduce the amount of insurance coverage they purchase for hurricane damage, and if so, how if at all does that affect the prices they are able bid in competitions against shipyards located in other parts of the country?

- Why does the contractual relief extend to four OPCs, as opposed to a smaller or greater number of OPCs?
- What is the dollar value of the contractual relief? As mentioned earlier, letter to the Acting Secretary of DHS from the Chair and Ranking Member of the House Transportation and Infrastructure Committee and the Chair and Ranking Member of that committee's Coast Guard and Maritime Transportation subcommittee regarding the OPC program (see **Appendix F**) states that under the Coast Guard's plan for providing contractual relief under P.L. 85-804, DHS and the Coast Guard plan to "spend up to an additional $659 million to complete those [four] cutters…." Is this figure is correct? How was it calculated?

Follow-On Competition

Potential oversight questions relating specifically to the follow-on competition for OPCs 5 through 15 include but are not necessarily limited to the following:

- If a follow-on competition is conducted for building ships 5 through 15 in the OPC program, how much of a production learning curve advantage would ESG have as a result of having some amount of production learning curve experience in building its OPC design?
- As mentioned earlier, the Coast Guard envisions that OPCs 5 through 15 would be built to a design that is largely similar to that of ESG's design for the first four OPCs.[43] What are the potential advantages and disadvantages of this approach compared to an approach under which bidders would be permitted to submit bids for building their own OPC designs? What actions, if any, are needed for the government to secure from ESG any design data rights that might be needed to conduct a competition limited to ESG's OPC design?
- If OPCs 5 through 15 would be built to a design that is largely similar to that of ESG's design for the first four OPCs, how much of a design-related advantage (as opposed to a production learning curve advantage), if any, would that provide to ESG in the competition? To what degree, if any, does ESG's design for the OPC include features that are optimized for ESG's construction facilities?
- If a follow-on competition were to permit bidders to submit bids for building their own designs for the OPC, and the winner of the competition is a builder that has submitted a design different from ESG's design, what might be the longer-term implications of operating and supporting a class of perhaps no more than four OPCs built to ESG's design?
- If a follow-on competition is conducted for building ships 5 through 15 in the OPC program, will the bidders be required to submit bids for only a contract with options, or for both a contract with options and, alternatively, a block buy

[43] As of October 11, 2019, the Coast Guard had obligated $11.3 million and expended $90.5 million on ESG's detailed design for the OPC. By February 3, 2020, these figures had grown to $122.7 million and $98.1 million, respectively. (Source: Email from Coast Guard liaison office to CRS, February 13, 2020.)

> contract? (See the section below on the issue of annual or multiyear [block buy] contracting for OPCs.)

Regarding the second question above, pertaining to design data rights, the Coast Guard stated the following to CRS in September 2017:

> Eastern Shipyard Group, Inc. (ESG) (or its subcontractors) owns the data rights to specific vessel design elements (e.g., hull form, etc.) that were developed wholly with contractor funds; however, the Coast Guard (in the OPC contract) has the ability to purchase rights regarding the hull form for re-procurement purposes. The data rights options for hulls 10-25 are contained within the contract under Section B [of ESG's OPC contract, called the Phase II contract]. A part of the Phase II contract's data and software rights clauses, the Coast Guard obtained either unlimited or government purpose data rights to vessel components and systems that were designed and/or developed using government funds or a mixture of contractor and government funds. As a result, the Coast Guard has data rights licenses for parts of the vessel design but not the complete vessel design.
>
> To construct the OPC with a yard other than ESG (i.e., potentially for hulls 10-25) the Coast Guard would need to complete its data library by purchasing the data rights owned by ESG (or its subcontractors); pricing for the Coast Guard to procure the additional data rights specifically needed for re-procurement was provided as part of the Phase II contract.[44]

Regarding the fifth question above, as shown earlier in the excerpts from the Coast Guard's October 18, 2019, RFI, the Coast Guard is requesting that firms responding to the RFI "provide input on the potential use of a block buy contracting approach during the course of the program and recommendations for incorporation of such an approach if your company deems that block buy contracting is feasible. Also, if your company deems that block buy contracting is not feasible, explain the rationale against using this approach."

Notional Schedule

Potential oversight questions relating specifically to the Coast Guard's notional schedule for acquiring OPCs 5 through 25 include but are not necessarily limited to the following:

- Does the schedule for soliciting and awarding industry studies for OPCs the fifth and subsequent OPCs provide proper amounts of time for firms to prepare bids for these contracts and to conduct the studies?
- Does the schedule provide a proper amount of time for the Coast Guard to evaluate the results of the industry studies and use the studies to inform the RFP for the DD&C contract?
- Would the envisioned procurement rate for the OPCs complete the OPC program too slowly, too quickly, or in about the right amount of time?

Regarding the final question above, as mentioned earlier, under the Coast Guard's new notional timeline, the Coast Guard's 14 Reliance-class 210-foot medium-endurance cutters would be replaced when they would be (if still in service) about 54 to 67 years old, and the Coast Guard's 13 Famous-class 270-foot medium-endurance cutters would be replaced when they would be (if still in service) about 42 to 52 years old.

[44] Source: Email from Coast Guard liaison office to CRS, September 6, 2017. The Coast Guard's email was in response to a question from CRS about whether the Coast Guard owned the data rights for ESG's OPC design.

November 25, 2019, House Committee Letter Regarding OPC Program

A November 25, 2019, letter to the Acting Secretary of DHS from the Chair and Ranking Member of the House Transportation and Infrastructure Committee and the Chair and Ranking Member of that committee's Coast Guard and Maritime Transportation subcommittee regarding the OPC program poses a number of questions regarding the Coast Guard's proposed course of action for the OPC program. The text of this letter, including these questions, is presented in **Appendix F**.

Risk of Procurement Cost Growth on OPCs 5-25

Another issue for Congress is the risk of procurement cost growth on OPCs 5 through 25, particularly given the increase in the OPC's estimated full load displacement from 3,500 to 3,730 tons as of May 2017 to 4,500 tons as of November 2019—an increase of more than 20%—and how this risk might affect the probability that OPCs can be built within the Coast Guard's affordability requirement for the OPC program of an average unit price of $310 million per ship, or less, in then-year dollars for ships 4 through 9 in the program for the shipbuilder's portion of the ship's total cost. Since, as a general matter, the cost of a ship of a given type is roughly proportional to its displacement, the increase of more than 20% in the OPC's estimated full load displacement raises a possibility that the cost to build OPCs may have increased, perhaps substantially, from earlier estimates. The draft statement of work (SOW) for the Coast Guard's intended follow-on competition for the OPC program that the Coast Guard posted on November 22, 2019, requires contractors responding to the RFI to provide, among other things, "a risk assessment of achieving the OPC Program's previously established affordability target for production OPCs."

Annual OPC Procurement Rate

The current procurement profile for the OPC, which reaches a maximum projected annual rate of two ships per year, would deliver OPCs many years after the end of the originally planned service lives of the medium-endurance cutters that they are to replace. As mentioned earlier, under the Coast Guard's new notional timeline, the Coast Guard's 14 Reliance-class 210-foot medium-endurance cutters would be replaced when they would be (if still in service) about 54 to 67 years old, and the Coast Guard's 13 Famous-class 270-foot medium-endurance cutters would be replaced when they would be (if still in service) about 42 to 52 years old. These ages, particularly for the Reliance-class cutters, would be very high, raising questions as to whether the ships could be made to last that long, and whether they would be able to cost effectively perform their missions at such ages.

Coast Guard officials have testified that the service plans to extend the service lives of the medium-endurance cutters until they are replaced by OPCs. There will be maintenance and repair expenses associated with operating aged medium-endurance cutters, particularly during their final years of intended service, and if the Coast Guard does not also make investments to increase the capabilities of these ships, the ships may have less capability in certain regards than OPCs.[45]

One possible option for addressing this situation would be to increase the maximum annual OPC procurement rate from the currently planned two ships per year to three or four ships per year. Doing this could result in the 25th OPC being delivered a few to several years sooner than under

[45] For further discussion, see Government Accountability Office, *Coast Guard Acquisitions[:] Actions Needed to Address Longstanding Portfolio Management Challenges*, GAO 18-454, July 2018, pp. 32-36.

the currently planned maximum rate. Increasing the OPC procurement rate to three or four ships per year would require a substantial increase to the Coast Guard's Procurement, Construction, and Improvements (PC&I) account,[46] an issue discussed in **Appendix B**, and/or providing additional funding for the procurement of OPCs through the Navy's budget.

Increasing the maximum procurement rate for the OPC program could, depending on the exact approach taken, reduce OPC unit acquisition costs due to improved production economies of scale. It could also create new opportunities for using competition in the program. Notional alternative approaches for increasing the OPC procurement rate to three or four ships per year include but are not necessarily limited to the following:

- increasing the production rate to three or four ships per year at a single shipyard—an option that would depend on that shipyard's production capacity;
- using two shipyards for building OPCs to a single OPC design;
- using two shipyards for building OPCs to two designs, with each shipyard building OPCs to its own design—an option that would result in two OPC classes (similar to how the Coast Guard currently operates two primary classes of medium-endurance cutters); or
- building additional NSCs in the place of some of the planned OPCs—an option that might include de-scoping equipment on those NSCs where possible to reduce their acquisition cost and make their capabilities more like that of the OPC.

The fourth alternative above—which could be viewed as broadly similar to how the Navy is using a de-scoped version of the San Antonio (LPD-17) class amphibious ship as the basis for its LPD-17 Flight II (LPD-30) class amphibious ships[47]—could be pursued in combination with one of the first three alternatives.

Annual or Multiyear (Block Buy) Contracting for OPCs

Another issue for Congress is whether to acquire OPCs 5 through 25 using annual contracting or multiyear contracting. The Coast Guard typically uses contracts with options for its shipbuilding programs. Although a contract with options may look like a form of multiyear contracting, it operates more like a series of annual contracts. Contracts with options do not achieve the reductions in acquisition costs that are possible with multiyear contracting. Using multiyear contracting involves accepting certain trade-offs.[48]

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[46] Prior to FY2019, the PC&I account was called the Acquisition, Construction, and Improvements (AC&I) account.

[47] For additional discussion, see CRS Report R43543, *Navy LPD-17 Flight II and LHA Amphibious Ship Programs: Background and Issues for Congress*, by Ronald O'Rourke.

[48] These trade-offs include the following:

- reduced congressional control over year-to-year spending, and tying the hands of future Congresses;

- reduced flexibility for making changes in Coast Guard acquisition programs in response to unforeseen changes in strategic or budgetary circumstances (which can cause any needed funding reductions to fall more heavily on acquisition programs not covered by multiyear contracts);

- a potential need to shift funding from later fiscal years to earlier fiscal years to fund economic order quantity (EOQ) purchases (i.e., up-front batch purchases) of components;

- the risk of having to make penalty payments to shipbuilders if multiyear contracts need to be terminated due to unavailability of funds needed for the continuation of the contracts; and

- the risk that materials and components purchased for ships to be procured in future years might go to waste if

One form of multiyear contracting, called block buy contracting, can be used at the start of a shipbuilding program, beginning with the first ship. (Indeed, this was a principal reason why block buy contracting was in effect invented in FY1998, as the contracting method for procuring the Navy's first four Virginia-class attack submarines.[49]) Section 311 of the Frank LoBiondo Coast Guard Authorization Act of 2018 (S. 140/P.L. 115-282 of December 4, 2018) provides permanent authority for the Coast Guard to use block buy contracting with economic order quantity (EOQ) purchases (i.e., up-front batch purchases) of components in its major acquisition programs. The authority is now codified at 14 U.S.C. 1137.

CRS estimates that if the Coast Guard were to use block buy contracting with EOQ purchases of components for acquiring the first several OPCs beginning with OPC 5, and either block buy contracting with EOQ purchases or another form of multiyear contracting known as multiyear procurement (MYP)[50] with EOQ purchases for acquiring the remaining ships in the program, the savings on the total acquisition cost of the 25 OPCs (compared to costs under contracts with options) could amount to hundreds of millions of dollars.

Planned NSC, OPC, and FRC Procurement Quantities

Another issue for Congress concerns the Coast Guard's planned NSC, OPC, and FRC procurement quantities. The POR's planned force of 91 NSCs, OPCs, and FRCs is about equal in number to the Coast Guard's legacy force of 90 high-endurance cutters, medium-endurance cutters, and 110-foot patrol craft. NSCs, OPCs, and FRCs, moreover, are to be individually more capable than the older ships they are to replace. Even so, a Coast Guard analysis conducted in 2011 (the most recent such analysis that the Coast Guard has released) concluded that the planned total of 91 NSCs, OPCs, and FRCs would provide 61% of the cutters that would be needed to fully perform the service's statutory missions in coming years, in part because Coast Guard mission demands are expected to be greater in coming years than they were in the past. For further discussion of this issue, about which CRS has testified and reported on since 2005,[51] see **Appendix A**.

Legislative Activity for FY2021

Summary of Appropriations Action on FY2021 Acquisition Funding Request

Table 2 summarizes appropriations action on the Coast Guard's request for FY2021 acquisition funding for the NSC, OPC, and FRC programs.

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those ships are not eventually procured.

[49] For additional discussion, see CRS Report R41909, *Multiyear Procurement (MYP) and Block Buy Contracting in Defense Acquisition: Background and Issues for Congress*, by Ronald O'Rourke.

[50] For more on MYP, see CRS Report R41909, *Multiyear Procurement (MYP) and Block Buy Contracting in Defense Acquisition: Background and Issues for Congress*, by Ronald O'Rourke.

[51] See Statement of Ronald O'Rourke, Specialist in National Defense, Congressional Research Service, Before the Senate Commerce, Science, and Transportation Committee, Subcommittee on Fisheries and the Coast Guard, Hearing on The Coast Guard's Revised Deepwater Implementation Plan, June 21, 2005, pp. 1-5.

Table 2. Summary of Appropriations Action on FY2021 Acquisition Funding Request

Figures in millions of dollars, rounded to nearest tenth

Request	Request	HAC	SAC	Final
NSC program	31			
OPC program	546			
FRC program	20			
TOTAL	**597**			

Source: Table prepared by CRS based on Coast Guard's FY2021 budget submission, HAC committee report, and SAC chairman's mark and explanatory statement on FY2021 DHS Appropriations Act. **HAC** is House Appropriations Committee; **SAC** is Senate Appropriations Committee.

Appendix A. Planned NSC, OPC, and FRC Procurement Quantities

This appendix provides further discussion on the issue of the Coast Guard's planned NSC, OPC, and FRC procurement quantities.

Overview

The Coast Guard's program of record for NSCs, OPCs, and FRCs includes only about 61% as many cutters as the Coast Guard calculated in 2011 would be needed to fully perform its projected future missions. (The Coast Guard's 2011 analysis is the most recent such analysis that the Coast Guard has released.) The Coast Guard's planned force levels for NSCs, OPCs, and FRCs have remained unchanged since 2004. In contrast, the Navy since 2004 has adjusted its ship force-level goals multiple times in response to changing strategic and budgetary circumstances.[52]

Although the Coast Guard's strategic situation and resulting mission demands may not have changed as much as the Navy's have since 2004, the Coast Guard's budgetary circumstances may have changed since 2004. The 2004 program of record was heavily conditioned by Coast Guard expectations in 2004 about future funding levels in the PC&I account. Those expectations may now be different, as suggested by the willingness of Coast Guard officials in 2017 to begin regularly mentioning the need for a PC&I funding level of $2 billion per year (see **Appendix B**).

It can also be noted that continuing to, in effect, use the Coast Guard's 2004 expectations of future funding levels for the PC&I account as an implicit constraint on planned force levels for NSCs, OPCs, and FRCs can encourage an artificially narrow view of Congress's options regarding future Coast Guard force levels and associated funding levels, depriving Congress of agency in the exercise of its constitutional power to provide for the common defense and general welfare of the United States, and to set funding levels and determine the composition of federal spending.

2009 Coast Guard Fleet Mix Analysis

The Coast Guard estimated in 2009 that with the POR's planned force of 91 NSCs, OPCs, and FRCs, the service would have capability or capacity gaps[53] in 6 of its 11 statutory missions—search and rescue (SAR); defense readiness; counterdrug operations; ports, waterways, and coastal security (PWCS); protection of living marine resources (LMR); and alien migrant interdiction operations (AMIO). The Coast Guard judges that some of these gaps would be "high risk" or "very high risk."

Public discussions of the POR frequently mention the substantial improvement that the POR force would represent over the legacy force. Only rarely, however, have these discussions explicitly acknowledged the extent to which the POR force would nevertheless be smaller in number than the force that would be required, by Coast Guard estimate, to fully perform the Coast Guard's statutory missions in coming years. Discussions that focus on the POR's

[52] See Table 1 and Table B-1 of CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*, by Ronald O'Rourke. As shown in those tables, the Navy's force-level goal of 2002-2004 was followed by new force- level goals in early 2005, February 2006, mid-2011, September 2011, March 2012, January 2013, March 2015, and December 2016.

[53] The Coast Guard uses *capability* as a qualitative term, to refer to the kinds of missions that can be performed, and *capacity* as a quantitative term, to refer to how much (i.e., to what scale or volume) a mission can be performed.

improvement over the legacy force while omitting mention of the considerably larger number of cutters that would be required, by Coast Guard estimate, to fully perform the Coast Guard's statutory missions in coming years could encourage audiences to conclude, contrary to Coast Guard estimates, that the POR's planned force of 91 cutters would be capable of fully performing the Coast Guard's statutory missions in coming years.

In a study completed in December 2009 called the Fleet Mix Analysis (FMA) Phase 1, the Coast Guard calculated the size of the force that in its view would be needed to fully perform the service's statutory missions in coming years. The study refers to this larger force as the objective fleet mix. **Table A-1** compares planned numbers of NSCs, OPCs, and FRCs in the POR to those in the objective fleet mix.

Table A-1. Program of Record Compared to Objective Fleet Mix

From Fleet Mix Analysis Phase 1 (2009)

Ship type	Program of Record (POR)	Objective Fleet Mix From FMA Phase 1	Objective Fleet Mix compared to POR	
			Number	%
NSC	8	9	+1	+13%
OPC	25	57	+32	+128%
FRC	58	91	+33	+57%
Total	**91**	**157**	**+66**	**+73%**

Source: Fleet Mix Analysis Phase 1, Executive Summary, Table ES-8 on page ES-13.

As can be seen in **Table A-1**, the objective fleet mix includes 66 additional cutters, or about 73% more cutters than in the POR. Stated the other way around, the POR includes about 58% as many cutters as the 2009 FMA Phase I objective fleet mix.

As intermediate steps between the POR force and the objective fleet mix, FMA Phase 1 calculated three additional forces, called FMA-1, FMA-2, and FMA-3. (The objective fleet mix was then relabeled FMA-4.) **Table A-2** compares the POR to FMAs 1 through 4.

Table A-2. POR Compared to FMAs 1 Through 4

From Fleet Mix Analysis Phase 1 (2009)

Ship type	Program of Record (POR)	FMA-1	FMA-2	FMA-3	FMA-4 (Objective Fleet Mix)
NSC	8	9	9	9	9
OPC	25	32	43	50	57
FRC	58	63	75	80	91
Total	**91**	**104**	**127**	**139**	**157**

Source: Fleet Mix Analysis Phase 1, Executive Summary, Table ES-8 on page ES-13.

FMA-1 was calculated to address the mission gaps that the Coast Guard judged to be "very high risk." FMA-2 was calculated to address both those gaps and additional gaps that the Coast Guard judged to be "high risk." FMA-3 was calculated to address all those gaps, plus gaps that the Coast Guard judged to be "medium risk." FMA-4—the objective fleet mix—was calculated to address all the foregoing gaps, plus the remaining gaps, which the Coast Guard judge to be "low risk" or

"very low risk." **Table A-3** shows the POR and FMAs 1 through 4 in terms of their mission performance gaps.

Table A-3. Force Mixes and Mission Performance Gaps

From Fleet Mix Analysis Phase 1 (2009)—an X mark indicates a mission performance gap

Missions with performance gaps	Risk levels of these performance gaps	Program of Record (POR)	FMA-1	FMA-2	FMA-3	FMA-4 (Objective Fleet Mix)
Search and Rescue (SAR) capability	Very high	X				
Defense Readiness capacity	Very high	X				
Counter Drug capacity	Very high	X				
Ports, Waterways, and Coastal Security (PWCS) capacity[a]	High	X	X			
Living Marine Resources (LMR) capability and capacity[a]	High	X	X			[all gaps addressed]
PWCS capacity[b]	Medium	X	X	X		
LMR capacity[c]	Medium	X	X	X		
Alien Migrant Interdiction Operations (AMIO) capacity[d]	Low/very low	X	X	X	X	
PWCS capacity[e]	Low/very low	X	X	X	X	

Source: Fleet Mix Analysis Phase 1, Executive Summary, page ES-11 through ES-13.

Notes: In the first column, The Coast Guard uses *capability* as a qualitative term, to refer to the kinds of missions that can be performed, and *capacity* as a quantitative term, to refer to how much (i.e., to what scale or volume) a mission can be performed.

a. This gap occurs in the Southeast operating area (Coast Guard Districts 7 and 8) and the Western operating area (Districts 11, 13, and 14).

b. This gap occurs in Alaska.

c. This gap occurs in Alaska and in the Northeast operating area (Districts 1 and 5).

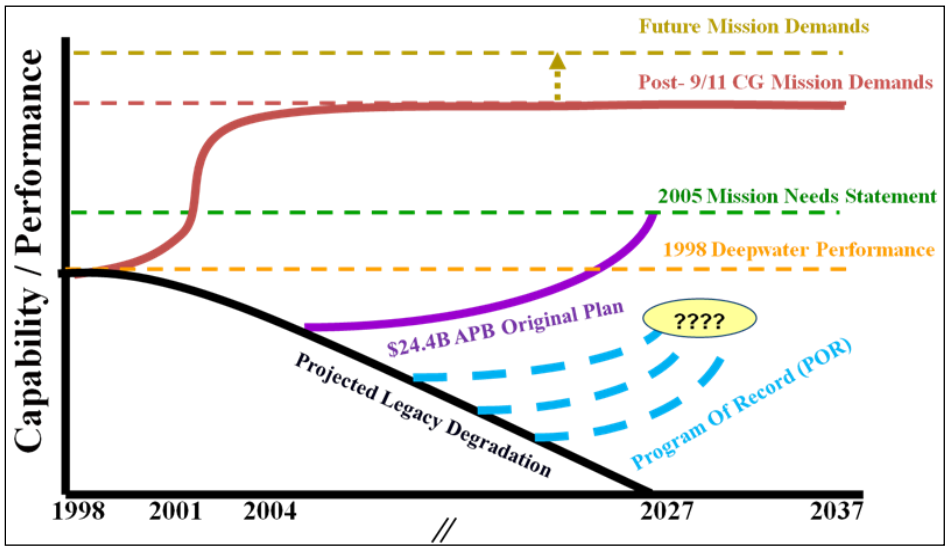
d. This gap occurs in the Southeast and Western operating areas.

e. This gap occurs in the Northeast operating area.

Figure A-1, taken from FMA Phase 1, depicts the overall mission capability/performance gap situation in graphic form. It appears to be conceptual rather than drawn to precise scale. The black line descending toward 0 by the year 2027 shows the declining capability and performance of the Coast Guard's legacy assets as they gradually age out of the force. The purple line branching up from the black line shows the added capability from ships and aircraft to be procured under the POR, including the 91 planned NSCs, OPCs, and FRCs. The level of capability to be provided when the POR force is fully in place is the green line, labeled "2005 Mission Needs Statement." As can be seen in the graph, this level of capability is substantially below a projection of Coast Guard mission demands made after the terrorist attacks of September 11, 2001 (the red line, labeled "Post-9/11 CG Mission Demands"), and even further below a Coast Guard projection of future mission demands (the top dashed line, labeled "Future Mission Demands"). The dashed blue lines show future capability levels that would result from reducing planned procurement quantities in the POR or executing the POR over a longer time period than originally planned.

Figure A-1. Projected Mission Demands vs. Projected Capability/Performance

From Fleet Mix Analysis Phase 1, Executive Summary



Source: Fleet Mix Analysis Phase 1, Executive Summary, Figure ES-1 on p. ES-2.

FMA Phase 1 was a fiscally unconstrained study, meaning that the larger force mixes shown in **Table A-2** were calculated primarily on the basis of their capability for performing missions, rather than their potential acquisition or life-cycle operation and support (O&S) costs.

Although the FMA Phase 1 was completed in December 2009, the figures shown in **Table A-2** were generally not included in public discussions of the Coast Guard's future force structure needs until April 2011, when GAO presented them in testimony.[54] GAO again presented them in a July 2011 report.[55]

The Coast Guard completed a follow-on study, called Fleet Mix Analysis (FMA) Phase 2, in May 2011. Among other things, FMA Phase 2 includes a revised and updated objective fleet mix called the refined objective mix. **Table A-4** compares the POR to the objective fleet mix from FMA Phase 1 and the refined objective mix from FMA Phase 2.

As can be seen in **Table A-4**, compared to the objective fleet mix from FMA Phase 1, the refined objective mix from FMA Phase 2 includes 49 OPCs rather than 57. The refined objective mix includes 58 additional cutters, or about 64% more cutters than in the POR. Stated the other way around, the POR includes about 61% as many cutters as the refined objective mix.

[54] Government Accountability Office, *Coast Guard[:]Observations on Acquisition Management and Efforts to Reassess the Deepwater Program, Testimony Before the Subcommittee on Coast Guard and Maritime Transportation, Committee on Transportation and Infrastructure, House of Representatives, Statement of John P. Hutton, Director Acquisition and Sourcing Management*, GAO-11-535T, April 13, 2011, p. 10.

[55] Government Accountability Office, *Coast Guard[:]Action Needed As Approved Deepwater Program Remains Unachievable*, GAO-11-743, July 2011, p. 46.

Table A-4. POR Compared to Objective Mixes in FMA Phases 1 and 2

From Fleet Mix Analysis Phase 1 (2009) and Phase 2 (2011)

Ship type	Program of Record (POR)	Objective Fleet Mix from FMA Phase 1	Refined Objective Mix from FMA Phase 2
NSC	8	9	9
OPC	25	57	49
FRC	58	91	91
Total	**91**	**157**	**149**

Source: Fleet Mix Analysis Phase 1, Executive Summary, Table ES-8 on page ES-13, and Fleet Mix Analysis Phase 2, Table ES-2 on p. iv.

Compared to the POR, the larger force mixes shown in **Table A-2** and **Table A-4** would be more expensive to procure, operate, and support than the POR force. Using the average NSC, OPC, and FRC procurement cost figures presented earlier (see "Background"), procuring the 58 additional cutters in the Refined Objective Mix from FMA Phase 2 might cost an additional $10.7 billion, of which most (about $7.8 billion) would be for the 24 additional FRCs. (The actual cost would depend on numerous factors, such as annual procurement rates.) O&S costs for these 58 additional cutters over their life cycles (including crew costs and periodic ship maintenance costs) would require billions of additional dollars.[56]

The larger force mixes in the FMA Phase 1 and 2 studies, moreover, include not only increased numbers of cutters, but also increased numbers of Coast Guard aircraft. In the FMA Phase 1 study, for example, the objective fleet mix included 479 aircraft—93% more than the 248 aircraft in the POR mix. Stated the other way around, the POR includes about 52% as many aircraft as the objective fleet mix. A decision to procure larger numbers of cutters like those shown in **Table A-2** and **Table A-4** might thus also imply a decision to procure, operate, and support larger numbers of Coast Guard aircraft, which would require billions of additional dollars. The FMA Phase 1 study estimated the procurement cost of the objective fleet mix of 157 cutters and 479 aircraft at $61 billion to $67 billion in constant FY2009 dollars, or about 66% more than the procurement cost of $37 billion to $40 billion in constant FY2009 dollars estimated for the POR mix of 91 cutters and 248 aircraft. The study estimated the total ownership cost (i.e., procurement plus life-cycle O&S cost) of the objective fleet mix of cutters and aircraft at $201 billion to $208 billion in constant FY2009 dollars, or about 53% more than the total ownership cost of $132 billion to $136 billion in constant FY2009 dollars estimated for POR mix of cutters and aircraft.[57]

A December 7, 2015, press report states the following:

> The Coast Guard's No. 2 officer said the small size and advanced age of its fleet is limiting the service's ability to carry out crucial missions in the Arctic and drug transit zones or to meet rising calls for presence in the volatile South China Sea.

[56] The FMA Phase 1 and Phase 2 studies present acquisition and life-cycle ownership cost calculations for force mixes that include not only larger numbers of NSC, OPCs, and FRCs, but corresponding larger numbers of Coast Guard aircraft.

[57] Fleet Mix Analysis Phase 1, Executive Summary, Table ES-11 on page ES-19, and Table ES-10 on page ES-18. The life-cycle O&S cost was calculated through 2050.

> "The lack of surface vessels every day just breaks my heart," VADM Charles Michel, the Coast Guard's vice commandant, said Dec. 7.
>
> Addressing a forum on American Sea Power sponsored by the U.S. Naval Institute at the Newseum, Michel detailed the problems the Coast Guard faces in trying to carry out its missions of national security, law enforcement and maritime safety because of a lack of resources.
>
> "That's why you hear me clamoring for recapitalization," he said.
>
> Michel noted that China's coast guard has a lot more ships than the U.S. Coast Guard has, including many that are larger than the biggest U.S. cutter, the 1,800-ton [sic:4,800-ton] National Security Cutter. China is using those white-painted vessels rather than "gray-hull navy" ships to enforce its claims to vast areas of the South China Sea, including reefs and shoals claimed by other nations, he said.
>
> That is a statement that the disputed areas are "so much our territory, we don't need the navy. That's an absolutely masterful use of the coast guard," he said.
>
> The superior numbers of Chinese coast guard vessels and its plans to build more is something, "we have to consider when looking at what we can do in the South China Sea," Michel said.
>
> Although they have received requests from the U.S. commanders in the region for U.S. Coast Guard cutters in the South China Sea, "the commandant had to say 'no'. There's not enough to go around," he said.[58]

Potential oversight questions for Congress include the following:

- Under the POR force mix, how large a performance gap, precisely, would there be in each of the missions shown in **Table A-3**? What impact would these performance gaps have on public safety, national security, and protection of living marine resources?
- How sensitive are these performance gaps to the way in which the Coast Guard translates its statutory missions into more precise statements of required mission performance?
- Given the performance gaps shown in **Table A-3**, should planned numbers of Coast Guard cutters and aircraft be increased, or should the Coast Guard's statutory missions be reduced, or both?
- How much larger would the performance gaps in **Table A-3** be if planned numbers of Coast Guard cutters and aircraft are reduced below the POR figures?
- Has the executive branch made sufficiently clear to Congress the difference between the number of ships and aircraft in the POR force and the number that would be needed to fully perform the Coast Guard's statutory missions in coming years? Why has public discussion of the POR focused mostly on the capability improvement it would produce over the legacy force and rarely on the performance gaps it would have in the missions shown in **Table A-3**?

[58] Otto Kreisher, "'Not Enough' USCG Vessels to Meet Demand for Presence in South China Sea, Arctic," *Seapower*, December 7, 2015.

- What projected mission demands or other factors may have changed since the Coast Guard's 2011 Fleet Mix Analysis, and how might these changes affect future required numbers of Coast Guard cutters and other Coast Guard assets?[59]

[59] For a blog post discussing this issue, see Chuck Hill, "Is Our Fleet Recapitalization on Course? Do We Need to Change the Destination?" *Chuck Hill's CG Blog*, September 8, 2019.

Appendix B. Funding Levels in PC&I Account

This appendix provides background information on funding levels in the Coast Guard's Procurement, Construction, and Improvements (PC&I) account.[60]

Overview

Table B-1 shows funding programmed in the PC&I account under the Coast Guard's FY2013-FY2021 budget submissions.

[60] Prior to FY2019, the PC&I account was called the Acquisition, Construction, and Improvements (AC&I) account.

Table B-1. Funding in PC&I Account in FY2013-FY2020 Budgets

Figures in millions of dollars, rounded to nearest tenth

Budget	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	Avg.
FY13	1,217.3	1,429.5	1,619.9	1,643.8	1,722.0									1,526.5
FY14		951.1	1,195.7	901.0	1,024.8	1,030.3								1,020.6
FY15			1,084.2	1,103.0	1,128.9	1,180.4	1,228.7							1,145.0
FY16				1,017.3	1,125.3	1,255.7	1,201.0	1,294.6						1,178.8
FY17					1,136.8	1,259.6	1,339.9	1,560.5	1,840.8					1,427.5
FY18						1,203.7	1,360.9	1,602.7	1,810.6	1,687.5				1,533.1
FY19							1,886.8	1,473.0	1,679.8	1,555.5	1,698.5			1,658.7
FY20								1,234.7	1,679.8	1,555.5	1,698.5	1,737.0		1,581.1
									1,637.1	n/a	n/a	n/a	n/a	n/a

Source: Table prepared by CRS based on Coast Guard FY2013-FY2020 budget submissions. n/a means not available.

The Coast Guard has testified that funding the PC&I account at a level of about $1 billion to $1.2 billion per year (the average levels under the FY2014-FY2016 budget submissions) would make it difficult to fund various Coast Guard acquisition projects, including the PSC program and improvements to Coast Guard shore installations. Coast Guard plans call for procuring OPCs at an eventual rate of two per year. If each OPC costs roughly $400 million, procuring two OPCs per year in a PC&I account of about $1 billion to $1.2 billion per year, as programmed under the FY2014-FY2016 budget submissions, would leave about $200 million to $400 million per year for all other PC&I-funded programs.

Since 2017, Coast Guard officials have been stating more regularly what they stated only infrequently in earlier years—that executing the Coast Guard's various acquisition programs fully and on a timely basis would require the PC&I account to be funded at a level of about $2 billion per year. Statements from Coast Guard officials on this issue in past years have sometimes put this figure as high as about $2.5 billion per year.

Using Past PC&I Funding Levels as a Guide for Future PC&I Funding Levels

In assessing future funding levels for executive branch agencies, a common practice is to assume or predict that the figure in coming years will likely be close to where it has been in previous years. While this method can be of analytical and planning value, for an agency like the Coast Guard, which goes through periods with less acquisition of major platforms and periods with more acquisition of major platforms, this approach might not always be the best approach, at least for the PC&I account.

More important, in relation to maintaining Congress's status as a co-equal branch of government, including the preservation and use of congressional powers and prerogatives, an analysis that assumes or predicts that future funding levels will resemble past funding levels can encourage an artificially narrow view of congressional options regarding future funding levels, depriving Congress of agency in the exercise of its constitutional power to set funding levels and determine the composition of federal spending.

Past Coast Guard Statements About Required PC&I Funding Level

At an October 4, 2011, hearing on the Coast Guard's major acquisition programs before the Coast Guard and Maritime Transportation subcommittee of the House Transportation and Infrastructure Committee, the following exchange occurred:

> REPRESENATIVE FRANK LOBIONDO:
>
> Can you give us your take on what percentage of value must be invested each year to maintain current levels of effort and to allow the Coast Guard to fully carry out its missions?
>
> ADMIRAL ROBERT J. PAPP, COMMANDANT OF THE COAST GUARD:
>
> I think I can, Mr. Chairman. Actually, in discussions and looking at our budget—and I'll give you rough numbers here, what we do now is we have to live within the constraints that we've been averaging about $1.4 billion in acquisition money each year.
>
> If you look at our complete portfolio, the things that we'd like to do, when you look at the shore infrastructure that needs to be taken care of, when you look at renovating our smaller icebreakers and other ships and aircraft that we have, we've done some rough estimates that it would really take close to about $2.5 billion a year, if we were to do all the things that we would like to do to sustain our capital plant.

> So I'm just like any other head of any other agency here, as that the end of the day, we're given a top line and we have to make choices and tradeoffs and basically, my tradeoffs boil down to sustaining frontline operations balancing that, we're trying to recapitalize the Coast Guard and there's where the break is and where we have to define our spending.[61]

An April 18, 2012, blog entry stated the following:

> If the Coast Guard capital expenditure budget remains unchanged at less than $1.5 billion annually in the coming years, it will result in a service in possession of only 70 percent of the assets it possesses today, said Coast Guard Rear Adm. Mark Butt.
>
> Butt, who spoke April 17 [2012] at [a] panel [discussion] during the Navy League Sea Air Space conference in National Harbor, Md., echoed Coast Guard Commandant Robert Papp in stating that the service really needs around $2.5 billion annually for procurement.[62]

At a May 9, 2012, hearing on the Coast Guard's proposed FY2013 budget before the Homeland Security subcommittee of the Senate Appropriations Committee, Admiral Papp testified, "I've gone on record saying that I think the Coast Guard needs closer to $2 billion dollars a year [in acquisition funding] to recapitalize—[to] do proper recapitalization."[63]

At a May 14, 2013, hearing on the Coast Guard's proposed FY2014 budget before the Homeland Security Subcommittee of the Senate Appropriations Committee, Admiral Papp stated the following regarding the difference between having about $1.0 billion per year rather than about $1.5 billion per year in the PC&I account:

> Well, Madam Chairman, $500 million—a half a billion dollars—is real money for the Coast Guard. So, clearly, we had $1.5 billion in the [FY]13 budget. It doesn't get everything I would like, but it—it gave us a good start, and it sustained a number of projects that are very important to us.
>
> When we go down to the $1 billion level this year, it gets my highest priorities in there, but we have to either terminate or reduce to minimum order quantities for all the other projects that we have going.
>
> If we're going to stay with our program of record, things that have been documented that we need for our service, we're going to have to just stretch everything out to the right. And when we do that, you cannot order in economic order quantities. It defers the purchase. Ship builders, aircraft companies—they have to figure in their costs, and it inevitably raises the cost when you're ordering them in smaller quantities and pushing it off to the right.

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[61] Source: Transcript of hearing.

[62] David Perera, "The Coast Guard Is Shrinking," *FierceHomelandSecurity.com*, April 18, 2012, accessed July 20, 2012, at http://www.fiercehomelandsecurity.com/story/coast-guard-shrinking/2012-04-18.

[63] Source: transcript of hearing. Papp may have been referring to remarks he made to the press before giving his annual state of the Coast Guard speech on February 23, 2012, in which reportedly stated that the Coast Guard would require about $2 billion per year in acquisition funding to fully replace its current assets. (See Adam Benson, "Coast Guard Cutbacks Will Cost 1,000 Jobs," *Norwich Bulletin*, February 23, 2012, accessed May 31, 2012, at http://www.norwichbulletin.com/x1138492141/Coast-Guard-cutbacks-will-cost-1-000-jobs. See also "Coast Guard Leader Calls For More Ships," *MilitaryFeed.com*, February 24, 2012, accessed May 31, 2012, at http://militaryfeed.com/coast-guard-leader-calls-for-more-ships-5/; Associated Press, "Coast Guard Commandant Calls for New Ships," *TheLog.com*, March 10, 2012, accessed May 31, 2012, at http://www.thelog.com/SNW/Article/Coast-Guard-Commandant-Calls-for-New-Ships-to-Replace-Aging-Fleet; Mickey McCarter, "Congress Poised to Give Coast Guard More Money Than Requested for FY 2013," *HSToday.us*, May 10, 2012, accessed May 31, 2012, at http://www.hstoday.us/focused-topics/customs-immigration/single-article-page/congress-poised-to-give-coast-guard-more-money-than-requested-for-fy-2013.html.) See also "Interview, Adm. Robert Papp, US Coast Guard Commandant," *Defense News*, November 11, 2013: 30.

> Plus, it almost creates a death spiral for the Coast Guard because we are forced to sustain older assets—older ships and older aircraft—which ultimately cost us more money, so it eats into our operating funds, as well, as we try to sustain these older things.
>
> So, we'll do the best we can within the budget. And the president and the secretary have addressed my highest priorities, and we'll just continue to go on the—on an annual basis seeing what we can wedge into the budget to keep the other projects going.[64]

At a March 12, 2014, hearing on the Coast Guard's proposed FY2015 budget before the Homeland Security subcommittee of the House Appropriations Committee, Admiral Papp stated the following:

> Well, that's what we've been struggling with, as we deal with the five-year plan, the capital investment plan, is showing how we are able to do that. And it will be a challenge, particularly if it sticks at around $1 billion [per year]. As I've said publicly, and actually, I said we could probably—I've stated publicly before that we could probably construct comfortably at about 1.5 billion [dollars] a year. But if we were to take care of all the Coast Guard's projects that are out there, including shore infrastructure that that fleet that takes care of the Yemen [sic: inland] waters is approaching 50 years of age, as well, but I have no replacement plan in sight for them because we simply can't afford it. Plus, we need at some point to build a polar icebreaker. Darn tough to do all that stuff when you're pushing down closer to 1 billion [dollars per year], instead of 2 billion [dollars per year].
>
> As I said, we could fit most of that in at about the 1.5 billion [dollars per year] level, but the projections don't call for that. So we are scrubbing the numbers as best we can.[65]

At a March 24, 2015, hearing on the Coast Guard's proposed FY2016 budget before the Homeland Security subcommittee of the House Appropriations Committee, Admiral Paul Zukunft, Admiral Papp's successor as Commandant of the Coast Guard, stated the following:

> I look back to better years in our acquisition budget when we had a—an acquisition budget of—of $1.5 billion. That allows me to move these programs along at a much more rapid pace and, the quicker I can build these at full-rate production, the less cost it is in the long run as well. But there's an urgent need for me to be able to deliver these platforms in a timely and also in an affordable manner. But to at least have a reliable and a predictable acquisition budget would make our work in the Coast Guard much easier. But when we see variances of—of 30, 40% over a period of three or four years, and not knowing what the Budget Control Act may have in store for us going on, yes, we are treading water now but any further reductions, and now I am—I am beyond asking for help. We are taking on water.[66]

An April 13, 2017, press report states the following (emphasis added):

> Coast Guard Commandant Adm. Paul Zukunft on Wednesday [April 12] said that for the Coast Guard to sustain its recapitalization plans and operations the service needs a $2 billion annual acquisition budget that grows modestly overtime to keep pace with inflation.
>
> The Coast Guard needs a "predictable, reliable" acquisition budget "and within that we need 5 percent annual growth to our operations and maintenance (O&M) accounts," Zukunft told reporters at a Defense Writers Group breakfast. Inflation will clip 2 to 3

[64] Transcript of hearing. The remarks were made in response to a question from Sen. Mary Landrieu.

[65] Transcript of hearing.

[66] Transcript of hearing. The remarks were made in response to a question from Rep. John Culberson.

> percent from that, but "at 5 percent or so it puts you on a moderate but positive glide slope so you can execute, so you can build the force," he said.[67]

In an interview published on June 1, 2017, Zukunft said the following (emphasis added):

> We cannot be more relevant than we are now. But what we need is predictable funding. We have been in over 16 continuing resolutions since 2010. I need stable and repeatable funding. **An acquisition budget with a floor of $2 billion.** Our operating expenses as I said, they've been funded below the Budget Control Act floor for the past five years. I need 5 percent annualized growth over the next five years and beyond to start growing some of this capability back.
>
> But more importantly, we [need] more predictable, more reliable funding so we can execute what we need to do to carry out the business of the world's best Coast Guard.[68]

[67] Calvin Biesecker, "Zukunft Wants $2 Billion Baseline Acquisition Budget; Sustained Growth In O&M Funding," *Defense Daily*, April 13, 2017: 1.

[68] Jill Aitoro, "Interview: Adm. Paul Zukunft Demands Coast Guard Respect," *Defense News*, June 1, 2017.

Appendix C. Information on NSC, OPC, and FRC Programs from GAO Report

This appendix presents additional information on the status and execution of the NSC, OPC, and FRC programs from a May 2018 GAO report reviewing DHS acquisition programs.[69]

NSC Program

Regarding the NSC program, the May 2018 GAO report states the following:

> DHS's Under Secretary for Management (USM) directed the USCG to complete follow-on operational test and evaluation (OT&E) by March 2019. According to USCG officials, the program's OTA began follow-on OT&E in October 2017, which will test unmet key performance parameters (KPP) and address deficiencies found during prior testing. The NSC completed initial operational testing in 2014, but did not fully demonstrate 7 of its 19 KPPs, including those related to unmanned aircraft and cutter-boat deployment in rough seas. According to USCG officials, operators have since demonstrated these KPPs during USCG operations. For example, USCG officials stated that they successfully demonstrated operations of a prototype unmanned aircraft on an NSC. However, the USCG will not evaluate the NSC's unmanned aircraft KPP until the unmanned aircraft undergoes initial OT&E, currently planned for June 2019. In addition, the NSC will be the first USCG asset to undergo cybersecurity testing. However, this test has been delayed over a year with the final cyber test event scheduled for August 2018 because of a change in NSC operational schedules, among other things.
>
> The DHS USM also directed the USCG to complete a study to determine the root cause of the NSC's propulsion system issues by December 2017; however, as of January 2018, the study was not yet complete. GAO previously reported on these issues—including high engine temperatures, cracked cylinder heads, and overheating generator bearings that were impacting missions—in January 2016....
>
> The USCG initially planned to implement a crew rotational concept in which crews would rotate while NSCs were underway to achieve a goal of 230 days away from the cutter's homeport. In February 2018, USCG officials told GAO they abandoned the crew rotational concept because the concept did not provide the USCG with the expected return on investment. Instead, USCG officials said a new plan has been implemented that does not rotate crew and is anticipated to increase the days away from home port from the current capability of 185 days to 200 days.[70]

OPC Program

Regarding the OPC program, the May 2018 GAO report states the following:

> DHS approved six key performance parameters (KPP) for the OPC related to the ship's operating range and duration, crew size, interoperability and maneuverability, and ability to support operations in moderate to rough seas. The first OPC has not yet been constructed, so the USCG has not yet demonstrated whether it can meet these KPPs. The USCG plans

[69] Government Accountability Office, *Home Security Acquisitions[:] Leveraging Programs' results Could Further DHS's Progress to Improve Portfolio Management*, May 2018, GAO-18-339SP, 109 pp., and Government Accountability Office, *Homeland Security Acquisitions[:]DHS Has Strengthened Management, but Execution and Affordability Concerns Endure*, GAO-16-338SP, March 2016, 110 pp. Hereinafter *GAO-18-339SP* and *GAO-16-338SP*, respectively.

[70] *GAO-18-339SP*, p. 92.

> to use engineering reviews, and developmental and operational tests throughout the acquisition to measure the OPC's performance.
>
> USCG officials told GAO that the program completed an early operational assessment on the basic ship design in August 2017, which entailed a review of the current design plans. The program plans to refine the ship's design as needed based on preliminary test results. However, as of December 2017, USCG officials had not received the results of this assessment.
>
> The USCG plans to conduct initial operational test and evaluation (OT&E) on the first OPC in fiscal year 2023. However, the test results from initial OT&E will not be available to inform key decisions. For example, the results will not be available to inform the decision to build 2 OPCs per year—which USCG officials said is scheduled to begin in fiscal year 2021. Without test results to inform these key decisions, the USCG must make substantial commitments prior to knowing how well the ship will meet its requirements....
>
> The USCG is in the process of completing the design of the OPC before starting construction, which is in-line with GAO shipbuilding best practices. In addition, USCG officials stated that the program is using state-of-the-market technology that has been proven on other ships as opposed to state-of-the-art technology, which lowers the risk of the program.[71]

FRC Program

Regarding the FRC program, the May 2018 GAO report states the following:

> In February 2017, DHS's Director, Office of Test and Evaluation (DOT&E) assessed the results from the program's July 2016 follow-on operational test and evaluation (OT&E) and determined that
>
> • the program met its six key performance parameters, and
>
> • the FRC was operationally effective and suitable.
>
> During follow-on OT&E, the OTA found that several deficiencies from the program's initial OT&E had been corrected. For example, the OTA closed a severe deficiency related to the engines based on modifications to the FRC's main diesel engines. However, five major deficiencies remain. According to USCG officials, the remaining deficiencies are related to ergonomics (e.g., improving the working environment for operators) and issues with stowage space. USCG officials stated that they plan to resolve the remaining deficiencies by fiscal year 2020.
>
> DOT&E noted that these deficiencies do not prevent mission completion or present a danger to personnel, but recommended that they be resolved as soon as possible. USCG officials indicated that they plan to resolve the remaining deficiencies through engineering or other changes....
>
> The USCG continues to work with the contractor—Bollinger Shipyards, LLC—to address issues covered by the warranty and acceptance clauses for each ship. For example, 18 engines—9 operational engines and 9 spare engines—have been replaced under the program's warranty. According to USCG documentation, 65 percent of the current issues with the engines have been resolved through retrofits; however, additional problems with the engines have been identified since our April 2017 review. For example, issues with water pump shafts are currently being examined through a root cause analysis and will be redesigned and are scheduled to undergo retrofits starting in December 2018. We previously found that the FRC's warranty resulted in improved cost and quality by requiring the shipbuilder to pay for the repair of defects. As of September 2017, USCG

[71] *GAO-18-339SP*, p. 94.

> officials said the replacements and retrofits completed under the program's warranty allowed the USCG to avoid an estimated $104 million in potential unplanned costs—of which $63 million is related to the engines.[72]

For a discussion of some considerations relating to warranties in shipbuilding and other acquisition programs, see **Appendix D**.

[72] *GAO-18-339SP*, p. 82. For additional discussions of warranties in acquisition programs, see **Appendix D**.

Appendix D. Some Considerations Relating to Warranties in Shipbuilding

This appendix presents some considerations relating to warranties in shipbuilding and other defense acquisition.[73]

In discussions of Navy and Coast Guard shipbuilding, one question that sometimes arises is whether including a warranty in a shipbuilding contract is preferable to not including one.

Including a warranty in a shipbuilding contract (or a contract for building some other kind of military end item), while potentially valuable, might not always be preferable to not including one—it depends on the circumstances of the acquisition, and it is not necessarily a valid criticism of an acquisition program to state that it is using a contract that does not include a warranty (or a weaker form of a warranty rather than a stronger one).

Including a warranty generally shifts to the contractor the risk of having to pay for fixing problems with earlier work. Although that in itself could be deemed desirable from the government's standpoint, a contractor negotiating a contract that will have a warranty will incorporate that risk into its price, and depending on how much the contractor might charge for doing that, it is possible that the government could wind up paying more in total for acquiring the item (including fixing problems with earlier work on that item) than it would have under a contract without a warranty.

When a warranty is not included in the contract and the government pays later on to fix problems with earlier work, those payments can be very visible, which can invite critical comments from observers. But that does not mean that including a warranty in the contract somehow frees the government from paying to fix problems with earlier work. In a contract that includes a warranty, the government will indeed pay something to fix problems with earlier work—but it will make the payment in the less-visible (but still very real) form of the up-front charge for including the warranty, and that charge might be more than what it would have cost the government, under a contract without a warranty, to pay later on for fixing those problems.

From a cost standpoint, including a warranty in the contract might or might not be preferable, depending on the risk that there will be problems with earlier work that need fixing, the potential cost of fixing such problems, and the cost of including the warranty in the contract. The point is that the goal of avoiding highly visible payments for fixing problems with earlier work and the goal of minimizing the cost to the government of fixing problems with earlier work are separate and different goals, and that pursuing the first goal can sometimes work against achieving the second goal.[74]

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[73] This appendix is adapted from Appendix C of CRS Testimony TE10019, *Options and Considerations for Achieving a 355-Ship Navy*, by Ronald O'Rourke.

[74] It can also be noted that the country's two largest builders of Navy ships—General Dynamics (GD) and Huntington Ingalls Industries (HII)—derive about 60% and 96%, respectively, of their revenues from U.S. government work. (See General Dynamics, *2016 Annual Report*, page 9 of Form 10-K [PDF page 15 of 88]) and Huntington Ingalls Industries, *2016 Annual Report*, page 5 of Form 10-K [PDF page 19 of 134]). These two shipbuilders operate the only U.S. shipyards currently capable of building several major types of Navy ships, including submarines, aircraft carriers, large surface combatants, and amphibious ships. Thus, even if a warranty in a shipbuilding contract with one of these firms were to somehow mean that the government did not have pay under the terms of that contract—either up front or later on—for fixing problems with earlier work done under that contract, there would still be a question as to whether the government would nevertheless wind up eventually paying much of that cost as part of the price of one or more future contracts the government may have that firm.

The Department of Defense's guide on the use of warranties states the following:

> Federal Acquisition Regulation (FAR) 46.7 states that "the use of warranties is not mandatory." However, if the benefits to be derived from the warranty are commensurate with the cost of the warranty, the CO [contracting officer] should consider placing it in the contract. In determining whether a warranty is appropriate for a specific acquisition, FAR Subpart 46.703 requires the CO to consider the nature and use of the supplies and services, the cost, the administration and enforcement, trade practices, and reduced requirements. The rationale for using a warranty should be documented in the contract file....
>
> In determining the value of a warranty, a CBA [cost-benefit analysis] is used to measure the life cycle costs of the system with and without the warranty. A CBA is required to determine if the warranty will be cost beneficial. CBA is an economic analysis, which basically compares the Life Cycle Costs (LCC) of the system with and without the warranty to determine if warranty coverage will improve the LCCs. In general, five key factors will drive the results of the CBA: cost of the warranty + cost of warranty administration + compatibility with total program efforts + cost of overlap with Contractor support + intangible savings. Effective warranties integrate reliability, maintainability, supportability, availability, and life-cycle costs. Decision factors that must be evaluated include the state of the weapon system technology, the size of the warranted population, the likelihood that field performance requirements can be achieved, and the warranty period of performance.[75]

[75] Department of Defense, *Department of Defense Warranty Guide*, Version 1.0, September 2009, accessed July 13, 2017, at https://www.acq.osd.mil/dpap/pdi/uid/docs/departmentofdefensewarrantyguide[1].doc.

Appendix E. Impact of Hurricane Michael on OPC Program at Eastern Shipbuilding

This appendix provides additional background information of the impact of Hurricane Michael on the OPC program at Eastern Shipbuilding Group (ESG).

An August 22, 2019, press released from Eastern Shipbuilding states

> On August 16th, 2019 Eastern Shipbuilding Group, a Panama City, Florida shipyard building both government and commercial vessels, successfully delivered the tug Capt. Jim McAllister. This is the fifth vessel to be delivered by the shipyard since Hurricane Michael, a category 5 storm—which devastated the region. This delivery marks another milestone in Eastern's accelerated return to normal operations, as well as its commitment to long term sustained recovery and economic stability for the industrial base of the Florida Panhandle. Other shipbuilding projects include three Staten Island Ferries, the Coast Guard Offshore Patrol Cutters, a large commercial fishing trawler, two harbor tugs, and two river pushboats. Eastern is actively bidding other projects and is poised to maintain its position as the go to shipyard on the US Gulf. All of these projects support skilled manufacturing jobs for Northwest Florida and over twenty five other states where Eastern buys material, equipment, and specialized services.
>
> Since the hurricane, Eastern has repaired or replaced all of its impacted equipment, buildings, and shipbuilding infrastructure as part of a major company-funded recapitalization effort. Additionally, Eastern has invested in new technology aimed at increasing shipbuilding efficiency. Eastern has also partnered with State and local Governmental agencies to plan additional investments of over $45 Million towards enhancing shipbuilding efficiency and capacity in both Bay and Gulf Counties in order to ensure long term stability and growth of the shipbuilding industry in Northwest Florida.
>
> As part of its recovery and growth from a once-in-a-generation storm, Eastern is actively recruiting and hiring additional personnel to join its team and support its long term commitment to building the best vessels for its government and commercial customers. Eastern remains grateful for the unwavering Federal, State, and local support during this recovery—empowering a devastated area by providing manufacturing and industrial employment opportunities.[76]

A July 31, 2019, press report states

> A bill needed to continue a long-awaited multi-billion-dollar Coast Guard shipbuilding project in Panama City sailed through a U.S. Senate committee on Wednesday [July 31].
>
> The bill, which received bipartisan support in the Senate Committee on Commerce, Science and Transportation, would let the Coast Guard renegotiate its $10.5 billion contract with Eastern Shipbuilding Group to account for higher labor costs and shortages caused by Hurricane Michael. The bill should help the project get back on track after the hurricane to create hundreds of new jobs that are needed more than ever as the area still recovers from the Category 5 storm, some officials say.
>
> According to a Wednesday news release, the committee approved U.S. Sen. Marco Rubio's Restore Coast Guard Capabilities Act [S. 2319] as part of the Coast Guard Reauthorization Act of 2019. Rubio's bill would give the Coast Guard the authority to renegotiate the contract with Eastern Shipbuilding to construct the first series of up to 25 offshore patrol

[76] Eastern Shipbuilding, "Eastern Shipbuilding Group, Inc. Successfully Delivers Fifth Vessel Since Hurricane Michael," August 22, 2019.

> cutters. Without a way to renegotiate the contract, the project could be delayed by years, Rubio's office warned.
>
> The Coast Guard requested the authority to renegotiate, while not exceeding the original affordability requirement set forth by the government in the existing contract, because of skyrocketing labor costs caused by the hurricane.
>
> The historic storm, which hit the Panhandle on Oct. 10, significantly damaged Tyndall Air Force Base. The press release states that the labor needed to rebuild the base is competing directly with the labor required to fulfill Eastern Shipbuilding's contract.[77]

A May 22, 2019, press report states

> A Category 5 hurricane that battered Florida's panhandle region last fall, including shipbuilder Eastern Shipbuilding Group, will impact the new medium-endurance cutter ship the company is building for the Coast Guard but at the moment it's unclear what the

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[77] Patrick McCreless, "Bill Passes Committee to Renogotiate Panama City Coast Guard Shipbuilding Contract," *Panama City News Herald*, July 31, 2019. The press release mentioned in the article, dated July 31, 2019, states

> Today, U.S. Senator Marco Rubio (R-FL) applauded the Senate Committee on Commerce, Science, and Transportation's approval of his Restore Coast Guard Capabilities Act (S.2319) as part of the Coast Guard Reauthorization Act of 2019 (S. 2297). Rubio's bill would give the U.S. Coast Guard the authority to take into account the impacts of Hurricane Michael to modify its Offshore Patrol Cutter (OPC) contract with Panama City-based Eastern Shipbuilding.
>
> On October 10, 2018, Hurricane Michael wreaked havoc in Northwest Florida, and made history as one of only four category 5 hurricanes to make landfall on the U.S. mainland. The Coast Guard has requested this authority that would provide much needed flexibility to modify the OPC contract, while not exceeding the original affordability requirement set forth by the government in the existing contract, as a result of skyrocketing labor costs due to Hurricane Michael. The Coast Guard maintains that acquisition of the OPC is its highest investment priority.
>
> "Continuing authorizations for the Coast Guard to protect Florida's waterways and our nation's homeland security is imperative," Rubio said. "I applaud the Senate Commerce Committee on approving this larger reauthorization, which includes several of my joint priorities that are critical to the Coast Guard's mission readiness. As a result of my partnership with Senator Scott, the bill now includes our Restore Coast Guard Capabilities Act, which will ensure the Coast Guard has the tools necessary to safeguard the Offshore Patrol Cutter even after the devastation caused by Hurricane Michael."
>
> Today, the Senate Committee on Commerce, Science and Transportation approved the Coast Guard Reauthorization Act of 2019 (S. 2297), which included several Rubio priorities:
>
> - The Restore Coast Guard Capabilities Act (S. 2319), adopted as an amendment offered by Senator Scott
> - Section 426: Coast Guard Shore Infrastructure Improvement Act
> - Section 221: Continuation of Coast Guard pay during lapse in appropriations. Senator Rubio is a cosponsor of the Pay Our Coast Guard Act (S. 21)
>
> Background:
>
> Eastern Shipbuilding is under contract with the Coast Guard to deliver up to 25 OPCs, the Coast Guard's highest priority investment program. However, Hurricane Michael significantly damaged Tyndall Air Force Base and the labor needed to rebuild the base is competing directly with the labor to fulfill the OPC contract. As a result, the Coast Guard has requested authorization from Congress to potentially revisit the contract to take into account the increased labor costs associated with the category 5 hurricane.
>
> ("Rubio Applauds Commerce Committee Passage of the Restore Coast Guard Capabilities Act to Build Offshore Patrol Cutters," July 31, 2019, accessed September 10, 2019, at https://www.rubio.senate.gov/public/index.cfm/press-releases?ID=52E5D8E4-2559-4F67-AFBD-D70EE38FC7A5.)

effects will be on cost and schedule, Coast Guard Commandant Adm. Karl Schultz said on Tuesday [May 21].

Eastern Shipbuilding's analysis of Hurricane Michael's impact on the Offshore Patrol Cutter (OPC) is due to the Coast Guard by May 31, and from there the service expects to have an understanding on the way forward with the program before the end of June, Schultz said in response to questions from Rep. Garret Graves (R-La.), during a hearing hosted by the House Transportation and Infrastructure Coast Guard and Maritime Transportation Subcommittee. He said Eastern Shipbuilding will provide "perspectives" on the cost and schedule and any other impacts.

"It's safe to say that we understand the impacts of a Category 5 hurricane on Eastern Shipbuilding Group will have an impact on the OPC program," Shultz said. He expects there to be some "puts and takes" after Eastern Shipbuilding submits its analysis.

Rep. Peter DeFazio (D-Ore.), citing a press report earlier in the hearing, said that Sen. Marco Rubio (R-Fla.) has inserted language in a draft disaster assistance bill allowing the Coast Guard and Eastern Shipbuilding to renegotiate the firm fixed-price contract the shipbuilder is working under for the OPC to account for damage to shore side facilities from Hurricane Michael and increased labor costs.

DeFazio said he is skeptical of the company's claim, noting, "I'm pretty sure they had insurance," and adding that "I question whether or not this has something to do with their original bid, which some thought was low." He also said he has concerns that a former Coast Guard Commandant that works for Eastern Shipbuilding has said he'll have authority to negotiate with his former service.

Retired Adm. Robert Papp, the 24th commandant of the Coast Guard, runs Eastern Shipbuilding's Washington, D.C., operations.

Eastern Shipbuilding did not respond to a query from Defense Daily about impacts to the OPC program from Hurricane Michael and any relief it may need from the current contract.

Schultz said that the OPC contract can't be renegotiated without legislative authorities from Congress. He said the Coast Guard, in response to an "ask" from Congress, provided language to help with drafting the proposed legislation related to the OPC in the disaster bill.

Schultz also said that the Coast Guard is not involved in Eastern Shipbuilding's lobbying efforts with Congress.[78]

A May 17, 2019, press report stated

As the Senate continues to negotiate the particulars of the supplemental disaster relief bill that seems poised to go to a vote next week, a new provision to save something many likely didn't know was at risk has been added.

A new line in the draft bill will let Eastern Shipbuilding Group renegotiate its contract with the U.S. Coast Guard to build up to 25 new off-shore patrol cutters.

"Under the old contract we were prohibited from negotiating for additional money for increased costs," said Admiral Bob Papp, President of Washington Operations for Eastern.

That meant that after Hurricane Michael, they would be unable to negotiate with the Coast Guard to help cover a slew of new costs associated with both the project and the hurricane, such as the damage from the Category 5 storm that needed repairs, the prolonged schedule

[78] Calvin Biesecker, "Coast Guard Expects Impact To OPC Program From Hurricane Michael, Commandant Says," *Defense Daily*, May 22, 2019.

> and the "skyrocketing" costs of labor, Papp said. The contract—the largest in the Coast Guard's history at more than $10 billion—didn't account for a natural disaster.
>
> It was going to be hard, Papp said, for Eastern to complete the project and to "stay healthy" without some negotiations. At stake in the community are 900 planned jobs and up to 5,000 indirect jobs officials believe will help jump-start the region's manufacturing economy.
>
> But an official in Sen. Marco Rubio's office said the latest version of the supplemental disaster relief bill now includes a provision that will allow negotiations.
>
> Rubio, according to the official, spoke with the President Donald Trump on Air Force One following the president's rally in Panama City Beach last week, helping to secure the language that made it into the bill.
>
> "We've waited far too long (for disaster relief), and we're also involved in some Florida-specific issues," Rubio said in a recent video. "For example, the Hurricane had an impact on a very important Coast Guard project that's in Northwest Florida and we want to make sure that project stays on target and continues to feed jobs because Northwest Florida desperately needs those jobs to recover. We're very hopeful. Cautiously optimistic, that next week can be a very good week."
>
> Papp thanked the area's congressional delegation for stepping up to advocate for this project, saying the company is "honored and delighted" to receive help.[79]

A January 28, 2019, press release from Eastern Shipbuilding stated

> Panama City, FL, Eastern Shipbuilding Group [ESG] reports that steel cutting for the first offshore patrol cutter (OPC), Coast Guard Cutter ARGUS (WMSM-915), commenced on January 7, 2019 at Eastern's facilities. ESG successfully achieved this milestone even with sustaining damage and work interruption due to Hurricane Michael. The cutting of steel will start the fabrication and assembly of the cutter's hull, and ESG is to complete keel laying of ARGUS later this year. Additionally, ESG completed the placement of orders for all long lead time materials for OPC #2, Coast Guard Cutter CHASE (WMSM-916).
>
> Eastern's President Mr. Joey D'Isernia noted the following: "Today represents a monumental day and reflects the dedication of our workforce - the ability to overcome and perform even under the most strenuous circumstances and impacts of Hurricane Michael. ESG families have been dramatically impacted by the storm, and we continue to recover and help rebuild our shipyard and community. I cannot overstate enough how appreciative we are of all of our subcontractors and vendors contributions to our families during the recovery as well as the support we have received from our community partners. Hurricane Michael may have left its marks but it only strengthened our resolve to build the most sophisticated, highly capable national assets for the Coast Guard. Today's success is just the beginning of the construction of the OPCs at ESG by our dedicated team of shipbuilders and subcontractors for our customer and partner, the United States Coast Guard. We are excited for what will be a great 2019 for Eastern Shipbuilding Group and Bay County, Florida."[80]

A November 1, 2018, statement from Eastern Shipbuilding states that the firm

> resumed operations at both of its two main shipbuilding facilities just two weeks after Hurricane Michael devastated Panama City Florida and the surrounding communities….
>
> … the majority of ESG's [Eastern Shipbuilding Group's] workforce has returned to work very quickly despite the damage caused by the storm. "Our employees are a resourceful

[79] Katie Landeck, "Provision Added to Disaster Relief Bill to Help Eastern Shipbuilding," *Panama City News Herald*, May 17, 2019.

[80] Eastern Shipbuilding press release entitled "Eastern Shipbuilding Group Announces Commencement of Steel Cutting for USCGC ARGUS (WMSM-915)," January 28, 2019, p. 1.

> and resilient group of individuals with the drive to succeed in the face of adversity. This has certainly been proven by their ability to bounce back over the two weeks following the storm. Our employees have returned to work much faster than anticipated and brought with them an unbreakable spirit, that I believe sets this shipyard and our community apart" said [Eastern Shipbuilding] President Joey D'Isernia. "Today, our staffing levels exceed 80% of our pre-Hurricane Michael levels and is rising daily."
>
> Immediately following the storm, ESG set out on an aggressive initiative to locate all of its employees and help get them back on the job as soon as practical after they took necessary time to secure the safety and security of their family and home. Together with its network of friends, partners, and customers in the maritime community, ESG organized daily distribution of meals and goods to employees in need. Additionally, ESG created an interest free deferred payback loan program for those employees in need and has organized Go Fund Me account to help those employees hardest hit by the storm. ESG also knew temporary housing was going to be a necessity in the short term and immediately built a small community located on greenfield space near its facilities for those employees with temporary housing needs.
>
> ESG has worked closely with its federal, state and commercial partners over the past two weeks to provide updates on the shipyard as well as on projects currently under construction. Power was restored to ESG's Nelson Facility on 10-21-18 and at ESG's Allanton Facility on 10-24-18 and production of vessels under contract is ramping back up. Additionally, all of the ESG personnel currently working on the US Coast Guard's Offshore Patrol Cutter contract have returned to work….
>
> "We are grateful to our partners and the maritime business community as a whole for their support and confidence during the aftermath of this historic storm. Seeing our incredible employees get back to building ships last week was an inspiration," said D'Isernia. "While there is no doubt that the effects of Hurricane Michael will linger with our community for years to come, I can say without reservation that we are open for business and excited about delivering quality vessels to our loyal customers."[81]

An October 22, 2018, press report states the following:

> U.S. Coast Guard officials and Eastern Shipbuilding Group are still assessing the damage caused by deadly category 4 Hurricane Michael to the Panama City, Fla.-based yard contracted to build the new class of Offshore Patrol Cutters.
>
> On September 28, the Coast Guard awarded Eastern Shipbuilding a contract to build the future USCGC *Argus* (WMSM-915), the first offshore patrol cutter (OPC). The yard was also set to build a second OPC, the future USCGC *Chase* (WMSM-916). Eastern Shipbuilding's contract is for nine OPCs, with options for two additional cutters. Ultimately, the Coast Guard plans to buy 25 OPCs.
>
> However, just as the yard was preparing to build *Argus*, Hurricane Michael struck the Florida Panhandle near Panama City on October 10. Workers from the shipyard and Coast Guard project managers evacuated and are just now returning to assess damage to the yard facilities, Brian Olexy, communications manager for the Coast Guard's Acquisitions Directorate, told USNI News.
>
> "Right now we haven't made any decisions yet on shifts in schedule," Olexy said….
>
> Since the yard was just the beginning stages of building *Argus*, Olexy said the hull wasn't damaged. "No steel had been cut," he said.

[81] Eastern Shipbuilding news release, November 1, 2018, entitled "Eastern Shipbuilding Group, Inc. Resumes Operations."

Eastern Shipbuilding is still in the process of assessing damage to the yard and trying to reach its workforce. Many employees evacuated the area and have not returned, or are in the area but lost their homes, Eastern Shipbuilding spokesman Justin Smith told USNI News.

At first, about 200 workers returned to work, but by week's end about 500 were at the yard, Smith said. The company is providing meals, water, and ice for its workforce.

"Although we were significantly impacted by this catastrophic weather event, we are making great strides each day thanks to the strength and resiliency of our employees," Joey D'Isernia, president of Eastern Shipbuilding, said in a statement.[82]

[82] Ben Werner, "Coast Guard, Shipbuilder Assessing Hurricane Damage to Yard Building Offshore Patrol Cutter," *USNI News*, October 22, 2018. See also Paul McLeary, "Hurricane Michael Hits Coast Guard's Largest Program, Leaving Devastation," *Breaking Defense*, October 18, 2018; Marex, "Despite Hurricane Michael, Eastern Shipbuilding Keeps Working," *Maritime Executive*, October 16, 2018; Samuel Hill, "Eastern Shipbuilding Hit Hard by Hurricane Michael," *Workboat*, October 16, 2018.

Appendix F. November 25, 2019, House Committee Letter Regarding OPC Program

This appendix presents text from a November 25, 2019, letter to the Acting Secretary of DHS from the Chair and Ranking Member of the House Transportation and Infrastructure Committee and the Chair and Ranking Member of that committee's Coast Guard and Maritime Transportation subcommittee regarding the OPC program. The letter states in part

> The Committee on Transportation and Infrastructure has reviewed your proposal to provide extraordinary relief under Public Law 85-804 as requested by Eastern Shipbuilding Group (ESG) for the construction of the Offshore Patrol Cutter (OPC). We are skeptical that such truly extraordinary relief is justified given that this "crisis" was foreseeable and mostly avoidable. Further, we are concerned that this relief sets a damaging precedent that any current or future contract with the United States Coast Guard (Coast Guard or Service) could be renegotiated outside the Federal Acquisition Regulations.
>
> As you know, the Coast Guard is in the middle of a rnulti-decade, multi-billion-dollar recapitalization of its cutter fleets. Last fall, the Service entered into a fixed price contract with ESG for the largest single acquisition in its history for the OPC. Shortly after entering into that contract, on October 10, 2018, Hurricane Michael hit the ESG shipyard and devastated the surrounding Panama City, Florida area where much of the shipyard workforce lived. The shipyard claims the impacts of the disaster rendered its facilities and workforce incapable of meeting the terms of the contract. The Department of Homeland Security (DHS) and the Service now propose to expand the timeframes for the delivery of each of the first four OPCs, spend up to an additional $659 million to complete those cutters, and then re-compete the contract earlier than previously planned. The decision to proceed with the current contractor raises a number of concerns for the Committee. Foremost among those concerns being the delay in delivering the cutters as well as the use of the Public Law No. 85-804 authority, which ultimately eliminates the Coast Guard's claim of getting the best value through a firm, fixed-price contract. If that were a priority for the Service, it would make more sense to pivot to a contractor who had competed for the original contract and is positioned to execute on it rather than create continued uncertainty around the OPC.
>
> For more than a decade, the Committee has tracked the widening capability gap between the existing legacy fleet of Medium Endurance Cutters (MECs)—several built during the Vietnam War—and the commissioning of new OPCs. During that time, the Committee has repeatedly urged the Coast Guard to undertake a ship life extension program (SLEP) for the MECs and advocated for the Service to look at alternative methods to acquire new mission capabilities. Due to limited funding provided for the Coast Guard's Procurement, Construction and Improvements account, the Service made the decision to defer initiating an MEC SLEP to partially offset the loss of MEC capability as those cutters aged out. Rather than heeding the Committee's caution, the Service decided to prioritize construction of the OPCs at the earliest possible time to allow the Coast Guard to continue to effectively carry out its law enforcement, drug and migrant interdiction, and search and rescue missions.
>
> The Service then compounded the risks of this "all-or-nothing" strategy by entering into a contract with ESG; a company that has never built a ship for the Federal government and whose bid came in at a per-vessel price far below that of other qualified bidders. This action led many observers to question whether the Coast Guard was taking too great a risk, but the Service believed, nonetheless, that the risk was acceptable.
>
> Regrettably, ESG began lobbying lawmakers for "relief" from the contract barely six months after agreeing to its terms. Within nine months, ESG formally notified the Coast

Guard that they could no longer meet the contractual schedule or deliver the OPC at the contract price.

In all, it appears the Coast Guard's initial failure to adequately examine the risks of using a shipyard with no government shipbuilding experience could be perpetuated by DHS granting this extraordinary relief under Public Law No, 85-804. The Committee is concerned that the Coast Guard, along with DHS, embarked on exploring options to resuscitate ESG and prevent it from defaulting on the OPC contract without first completing a transparent and objective alternatives analysis. Additionally, the veil of secrecy regarding its analysis and the absence of any meaningful consultation by the Coast Guard and DHS with the Committee, provides us scant confidence that any revised OPC contract will not encounter a similar fate as the original contract.

Accordingly, the Committee would like to know:

- Why did the Coast Guard fail to stop construction on hull #1 as soon as they learned the contractor was informing lawmakers that it would be unable to meet the terms of the contract?
- What interim measures are available to mitigate the lost mission capabilities while the OPC contract is being delayed and recompeted?
- Is the Coast Guard considering the use of leased barges to support helicopter operations, the acquisition of additional National Security Cutters or Fast Response Cutters, or other available options?
- What national security missions will be carried out by each of the four OPCs for which relief is sought?
- What is the status of the ship life extension program for the 270B MECs?

Regarding a revised OPC contract, the Committee would like to know?

- Has the Department requested authority from Congress to expedite the re-compete of the OPC contract?
- How will the Coast Guard ensure that no additional extraordinary relief will be needed beyond the potential upward limit of $659 million and the proposed schedule extensions?
- Are the federal/non-federal share lines for each of the first four OPCs set in the DHS decision granting limited Public Law No. 85-804 extraordinary relief, and if not, what are these share lines and what is their justification request?
- In which fiscal years will it be necessary to request funds above the amounts projected for the OPCs in the Coast Guard's latest Capital Improvement Plan? In what amounts?
- On what ship design will the re-compete be based?
- Can you confirm that the Coast Guard owns the OPC design?
- How many additional construction hours above the amount on which the initial bid was based are now anticipated for each of hulls #1-4?
- What controls will be instituted to ensure that there is no excessive overage in production hours?
- What conditions do the Coast Guard intend to include in a revised contract to ensure transparency in all financial transactions; accountability with all performance metrics and timetables for deliverables; certification and notification standards and protocols before the Coast Guard or DHS exercises an option on hulls #2-4?

- Given the fact that the contractor is unable to perform under the terms of the original contract, will any effort be made to receive the performance bond associated with the contract?

The Committee will continue to investigate these issues and closely monitor this situation. We are concerned about the impacts any further delays of this contract will have on the Service's ability to carry out its critical mission responsibilities and the overall impact the escalated cost of producing these assets will have on the Coast Guard's Procurement, Construction and Improvements account for the foreseeable future. As we begin negotiations with the Senate on the Coast Guard Authorization Act of 2019, we will examine if further legislation is necessary to protect U.S. taxpayers from profligate, unwise spending, notwithstanding the urgent need to provide the Coast Guard with the modern assets it needs to remain the world's preeminent Coast Guard.[83]

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[83] The letter was accessed November 27, 2019, at https://transportation.house.gov/imo/media/doc/2019-11-25 DHS 85-804 Big 4 Letter.pdf.