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HOUSE TRANSPORTATION AND INFRASTRUCTURE COMMITTEE

STATEMENT OF

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BEFORE THE

HOUSE TRANSPORTATION AND INFRASTRUCTURE COMMITTEE

SUBCOMMITTEE ON COAST GUARD AND MARITIME TRANSPORTATION

HEARING ON

MAINTAINING COAST GUARD READINESS

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Chairman Hunter, Ranking Member Garamendi, distinguished members of the subcommittee, thank you for the opportunity to appear before you today to testify on maintaining Coast Guard readiness. As with my testimony to the subcommittee last year,[1] my testimony today will focus on issues relating to Coast Guard acquisition funding and acquisition programs, which will affect future Coast Guard readiness.

Program of Record's Planned Force Levels

As a starting point for discussing Coast Guard acquisition and its effect on future Coast Guard readiness, it can be noted that the Coast Guard's program of record for acquiring new cutters and aircraft capable of operating in the deepwater environment includes, by the Coast Guard's calculation, approximately 61% as many cutters and 52% as many aircraft as would be needed to fully perform the Coast Guard's statutory missions in coming years (see **Appendix**). The program of record force, while considerably more capable than the Coast Guard's legacy force, is a fiscally constrained force, not a full-mission-performance force.

This aspect of the program of record force is sometimes overlooked in discussions of Coast Guard acquisition. It is discussed in some detail in my report on Coast Guard cutter procurement.[2] Based on the Coast Guard's calculations, not completely fulfilling the program of record would deepen a capacity shortfall relative to projected future mission demands that is already built into Coast Guard plans.

FY2015 Five-Year CIP Not Available As Of Early June

As of early June, the Coast Guard had not yet submitted to Congress the FY2015 version of its five-year Capital Investment Plan (CIP), despite requests from this subcommittee and others that oversee the Coast Guard for the service to submit the FY2015 CIP in a timely manner. The Coast Guard operates a fleet of long-lived major capital assets (ships and aircraft), and replaces this fleet over a period of many years through expensive acquisition programs. In light of this, having access to a five-year CIP can be valuable if not critical to Congress for evaluating the Coast Guard's proposed budget for the coming fiscal year, and for otherwise exercising Congress' oversight responsibilities. In general, the absence of data on projected acquisitions beyond the coming budget year can make it more difficult for Congress to assess whether acquisition quantities and funding levels proposed for the coming budget year are appropriate.

Coast Guard testimony at hearings held earlier this year suggests that the delay in the submission of the FY2015 CIP has been due at least in part to a basic disagreement between the Coast Guard and the Office of Management and Budget (OMB) concerning the funding level in coming years for the Coast Guard's Acquisition, Construction, and Improvements (AC&I), with OMB apparently supporting a level of roughly $1 billion a year, and the Coast Guard apparently advocating a higher figure of perhaps $1.5 billion per year, or more.[3]

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[1] Statement of Ronald O'Rourke, Specialist in Naval Affairs, Congressional Research Service, before the House Transportation and Infrastructure Committee Subcommittee on Coast Guard and Maritime Transportation Hearing on Coast Guard Readiness: Examining Cutter, Aircraft, and Communications Needs, June 26, 2013.

[2] CRS Report R42567, *Coast Guard Cutter Procurement: Background and Issues for Congress*, by Ronald O'Rourke. The appendix to this statement is drawn from this report.

[3] At a March 26, 2014, hearing before this subcommittee on the proposed FY2015 budgets for the Coast Guard and maritime transportation programs, then-Commandant of the Coast Guard Admiral Robert Papp, when asked by Chairman Hunter when the FY2015 CIP would be submitted, replied:

> Well it should be any day sir, I know that the Secretary [of DHS] has forwarded it on, the Secretary has been in question [sic: questioned] on this [at congressional hearings], [and] I was questioned on it two weeks ago at the Appropriations Subcommittee.

The difference between these two positions on future levels of funding in the AC&I account represents a major fork in the road for the Coast Guard's future readiness to perform its missions. The previous Commandant of the Coast Guard, Admiral Robert Papp, stated on multiple occasions that recapitalizing the Coast Guard's ship and aircraft fleets on a timely basis while also adequately funding other programs covered in the AC&I account would require a funding level of $1.5 billion to $2 billion per year. A sustained funding level of about $1 billion per year, he testified last year, "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."[4]

As I testified last year, a comparison with the Navy's budget, while presenting many apples-vs.-oranges issues, suggests that if funding for Coast Guard acquisition were proportionate on a uniformed personnel per-capita basis to Navy acquisition, the AC&I account would total $3.4 billion to $3.5 billion per year. Discounting this figure by one-third to one-half to account for the higher-cost items in the Navy's investment portfolio would produce a figure for the AC&I account of about $1.7 billion to $2.3 billion per year.

One option for the subcommittee would be to request that OMB provide the following:

> Frankly, two weeks ago, as I told the subcommittee then, a part of it was my obstinence in holding out and trying to get the best position for what I foresee the Coast Guard needs... in the future. And I think that's rightly so, we have those very robust discussions in the administration before the budget goes forward. The Secretary [of DHS] is supporting the position that I have in terms of what should be in the CIP for the next five years and I know that he was working directly with the Office or [sic: of] Management Budget to—in order to get it with the administration as soon as possible.
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> (Transcript of hearing. Papp's remarks as presented here omit a short remark from Chairman Hunter that occurred between "the Coast Guard needs" and "in the future." The remark was: "I read your testimony and I appreciate it.")

At the above-mentioned earlier hearing—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, when asked about the delay in submitting the FY2015 CIP, replied:

> Sir, it's my fault. You can rightly hold us accountable for that. And if there's any delay, it's because I've been obstinate in making sure that the administration knows the needs of the United States Coast Guard.
>
> It's—it's not my job, at first, to fit the Coast Guard within a budget. It's my job to look at what we need now and what we're going to need 10, 20 and 30 and 40 years from now. There's only one person who has that responsibility, and that's me.
>
> So, there is a—I would say a robust discussion that goes forth, first of all with the department [DHS], and the department's been very supportive. And then we work with the Office of Management and Budget. And at some point, we come to an agreement. But what I would say is, we've been fighting for everything that we need to try and get it in that five-year plan. And there is—there are—there are disagreements. That's—that's, I think, the most polite way I can put it. And—and at the end of the day, we will finally get to a point where we come to agreement. I'm told, "This is what you're going to get. You have to fit your—your acquisition plan within it." And I think we're at that stage now.
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> The Secretary [of DHS] has—has committed to making sure we get reports on time. He has—he—we have forwarded it to the department. It has been forwarded on to OMB. And we will—we will work as hard as we can to make sure you get it as soon as possible.
>
> (Transcript of hearing.)

[4] Transcript of May 14, 2013, hearing on the Coast Guard's proposal FY2014 budget before the Homeland Security subcommittee of the Senate Appropriations Committee.

- the analytical basis (including capital asset replacement analysis and mission performance analysis) for concluding that an AC&I account of about $1 billion per year would be appropriate; and

- a long-range projection for Coast Guard capability and capacity, if the AC&I account remains at about $1 billion per year in coming years.

Requested FY2015 AC&I Funding Level Relative to FY2014 CIP

In my testimony last year, I discussed how the FY2014 CIP included a total of about $5.1 billion in acquisition funding, which was about $2.5 billion, or about 33%, less than the total of about $7.6 billion that was included in the Coast Guard's FY2013 CIP. (In the four common years of the two plans—FY2014-FY2017—the reduction in funding from the FY2013 CIP to the FY2014 CIP was about $2.3 billion, or about 37%.) I noted that this was one of the largest percentage reductions in funding that I had seen a five-year acquisition account experience from one year to the next in many years, and that there had been no change in the Coast Guard's strategic environment since the previous year that would suggest a significant reduction in estimated future missions for the Coast Guard.

Although the Coast Guard as of early June had not submitted its FY2015 CIP, the amount of funding requested for the AC&I account for FY2015—$1,084.2 million—does not provide any suggestion that the administration intends to return the AC&I account to the higher funding levels shown in the FY2013 CIP. To the contrary, as shown in **Table 1**, the $1,084.2 million requested for the AC&I account for FY2015 represents a 9.3% reduction from the amount ($1,195.7 million) that was projected for FY2015 under the FY2014 CIP. There still has been no change in the Coast Guard's strategic environment that would suggest a significant reduction in estimated future missions for the Coast Guard since the FY2013 CIP.

Table 1. Funding in AC&I Account

Millions of dollars, rounded to nearest tenth

	FY13	FY14	FY15	FY16	FY17	FY18	FY19
FY13 CIP	1,217.3	1,429.5	1,619.9	1,643.8	1,722.0		
FY14 CIP		951.1	1,195.7	901.0	1,024.8	1,030.3	
FY15 CIP			1,084.2	n/a	n/a	n/a	n/a

Source: FY2013, FY2014, and FY2015 Coast Guard budget submissions.

Notes: n/a means not available as of early June.

Coast Guard Appears to View Polar Icebreaker As Potentially Something Like An Unfunded Requirement

Under the Coast Guard's FY2015 budget submission, the time line for acquiring a new polar icebreaker has become less certain. In the FY2013 budget submission—the submission that initiated the project to acquire the ship—DHS stated that it anticipated awarding a construction contract for the ship "within the next five years" and taking delivery on the ship "within a decade."[5] In the FY2014 budget submission,

[5] U.S. Department of Homeland Security, *Annual Performance Report, Fiscal Years 2011 – 2013*, p. CG-AC&I-40 (pdf page 1,777 of 3,134).

DHS stated that it anticipated awarding a construction contract for the ship "within the next four years."[6] In the Coast Guard's FY2015 budget-justification book, the entry for the polar icebreaker program does not make a statement as to when a construction contract for the ship might be awarded.[7]

Coast Guard testimony about the icebreaker this year suggests that if the AC&I account remains at about $1 billion per year in coming years, the icebreaker could become something like an unfunded requirement. For example, at a March 26, 2014, hearing before this subcommittee on the proposed FY2015 budgets for the Coast Guard and maritime transportation programs, Admiral Papp testified that "It's going to be tough to fit a billion dollar icebreaker in our five-year plan without displacing other things," that "I can't afford to pay for an icebreaker in a $1 billion [per year CIP] because it would just displace other things that I have a higher priority for," and that "I still believe firmly, we need to build a new one but we don't have [the] wherewithal right now, but doing the preliminary work should inform decisions that are made three, four, five, maybe 10 years from now."[8]

The Coast Guard states that it will seek to fund the ship on an interagency basis, the rationale being that other federal agencies, such as National Science Foundation and the Department of Defense, obtain direct benefits from the operation of Coast Guard polar icebreakers. This approach has some precedent—the polar icebreaker *Healy* was funded in FY1990 through the Navy's shipbuilding account. Even so, this is an uncertain funding approach, as other federal agencies now face challenges in funding their own programs within budget constraints.

The eighth and final National Security Cutter (NSC) is to be funded in FY2015, and the first Offshore Patrol Cutter (OPC), according to the FY2013 and FY2014 CIPs, is to be funded primarily in FY2017. Consequently, the FY2016 column may represent a window of opportunity of sorts in the AC&I account for funding a portion (perhaps a significant portion) of the cost of a new polar icebreaker.

Transfer of 14 C-27s Provides Some AC&I Account Funding Relief

The Coast Guard has testified this year that the transfer of 14 C-27 aircraft from the Air Force to the Coast Guard will permit the Coast Guard to not procure 18 HC-144A aircraft called for in the program of record, and that this will provide the Coast Guard with a net savings of roughly $500 million. Other things held equal, this will reduce pressure on the AC&I account for the next few years. It is a measure of just how much pressure the AC&I account is under, however, that even with this windfall, the Coast Guard is apparently unable to identify funding for a new polar icebreaker without making unwanted reductions to other AC&I-funded programs.

National Security Cutters (NSCs) Could Have Been Acquired Less Expensively

As mentioned above, the FY2015 budget requests funding for the eighth NSC, which is to be the final NSC under the program of record. As the acquisition funding stream for acquiring these ships approaches its end, it can be noted that these ships could have been acquired less expensively if they had been

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[6] Department of Homeland Security, United States Coast Guard, *Fiscal Year 2014 Congressional Justification*, p. CGAC&I-32 (pdf page 204 of 403).

[7] Department of Homeland Security, United States Coast Guard, *Fiscal Year 2015, Congressional Justification*, p. CGAC&I-42 (pdf page 196 of 474).

[8] Transcript of hearing.

awarded on a more-even rate (such as a steady one ship per year) and if at least some of the ships had been acquired with a form of multiyear contracting (i.e., either multiyear procurement [MYP] or block buy contracting).[9] The savings from such an approach might have been sufficient to pay for a substantial fraction of one of the eight ships in the class.

Phase II Fast Response Cutter (FRC) Contract May Present An Opportunity for Multiyear Contracting

On September 18, 2013, the Fast Response Cutter (FRC) program received approval from DHS to enter full-rate production,[10] which might be interpreted as four or six FRCs per year, given past FRC production rates of up to six per year. In another reflection of the pressure that the AC&I account is under, however, the Coast Guard's FY2015 budget requests for funding for two FRCs rather than four or six. The request for two FRCs rather than four or six appears to be the result of the FY2015 AC&I account totaling about $1 billion rather than something closer to $1.5 billion, combined with the plan to fund the eighth NSC in FY2015. If the AC&I account remains at about $1 billion per year in coming years, similar pressures on the FRC program could arise in FY2017 and beyond, when the NSC program's place in AC&I account is to be, in effect, taken up by the OPC.

The Coast Guard holds the data rights for the current FRC design and originally planned to hold a competition for a contract to build the remaining 28 FRCs to be procured in FY2015 and beyond (aka the Phase II contract). The Request for Proposals (RFP) for that competition, however, will not be issued soon enough to include FRCs funded in FY2015. Consequently, the Coast Guard now plans to issue a sole-source contract to the current FRC builder, Bollinger, for the construction of the FRCs that are funded in FY2015, and then hold a competition for a Phase II contract covering FRCs procured in FY2016 and beyond. If two (or four or six) FRCs are funded in FY2015 and awarded to Bollinger, then the Phase II contract would cover up to 26 (or 24 or 22) additional FRCs.[11]

On May 29, the Coast Guard released a draft Request for Proposals (RFP) for the Phase II contract.[12] The draft RFP anticipates the Phase II contract being a contract with options, like the Phase I contract with Bollinger that was used for acquiring the first 30 FRCs.[13] An alternative approach for the Phase II contract would be to make it a multiyear contract (i.e., an MYP or block buy contract). An MYP or block buy contract might result in acquisition costs for FRCs procured in FY2016 and beyond that are lower than those possible under an options contract. If there is uncertainty as to the exact annual quantities of FRCs that may be procured in coming years, an MYP or block buy contract could be written to include annual quantity ranges rather than specific annual quantities. One option for the subcommittee would be to

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[9] For more on MYP and block buy contracting, see CRS Report 41909, *Multiyear Procurement (MYP) and Block Buy Contracting in Defense Acquisition: Background and Issues for Congress*, by Ronald O'Rourke and Moshe Schwartz.

[10] "Acquisition Update: Sentinel-class Fast Response Cutter Project Achieves Acquisition Milestone," September 18, 2013, accessed November 18, 2013, at http://www.uscg.mil/acquisition/newsroom/updates/frc092413.asp.

[11] Source: Telephone conversation with Coast Guard liaison office, June 3, 2014.

[12] The Coast Guard requested that industry feedback on the draft RFP be returned by August 14, 2014. See "Acquisition Update: Draft Request for Proposal for Second FRC Production Phase Released," May 30, 2014, accessed June 5, 2014, at http://www.uscg.mil/acquisition/newsroom/updates/frc053014.asp. See also Calvin Biesecker, "Coast Guard Releases Draft RFP For New FRC Competition," *Defense Daily*, June 3, 2014: 2-3.

[13] Source: Telephone conversation with Coast Guard liaison office, June 9, 2014.

understand the potential savings that might be realized through the use of multiyear contracting rather than an options contract. The subcommittee, for example, could consider requesting either the Coast Guard or another organization (such as the Navy) to develop an estimate of the potential savings. As noted in my testimony last year, the Navy makes extensive use of multiyear contracting and consequently is experienced in developing such estimates.

Block Buy Contracting Is An Option For The First Few Offshore Patrol Cutters (OPCs)

Section 215 of H.R. 4005, the Coast Guard and Maritime Transportation Act of 2014, provides authority for the use of MYP contracts for the OPC program. Based on experience with Navy shipbuilding programs, this authority might not be usable until construction of the first OPC is completed in 2020 or 2021, because completion of the lead ship has been the standard in Navy shipbuilding programs for demonstrating that the program has a stable design, which is one of the requirements of 10 USC 2306b, the statute that governs MYP.

If Congress wants to employ multiyear contracting in the OPC program prior to the completion of the lead ship in the program, it could do so by authorizing block buy contracting. With congressional approval, the Navy used a block buy contract to procure the first four boats in the Virginia-class attack submarine program. (Indeed, this contract represented the creation of block buy contracting.) A block buy contract could achieve much of the savings that would be possible in an MYP contract, particularly if the authority to use a block buy contract is written to include the authority normally present in an MYP contract for use of economic order quantity (EOQ) purchases of long-leadtime components.

Mr. Chairman, this concludes my statement. Thank you again for the opportunity to testify, and I look forward to the subcommittee's questions.

Appendix: Adequacy of Planned Numbers of NSCs, OPCs, and FRCs

This appendix reprints with minor changes part of a discussion on the adequacy of planned numbers of NSCs, OPCs, and FRCs from the CRS report on Coast Guard cutter procurement.[14]

The Coast Guard program of record's (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, Coast Guard studies have concluded that the planned total of 91 NSCs, OPCs, and FRCs would be considerably fewer ships than the number 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. CRS first testified about this issue in 2005.[15]

The Coast Guard estimates that with the POR's planned force of 91 NSCs, OPCs, and FRCs, the service would have capability or capacity gaps[16] in 6 of its 11 statutory missions—search and rescue (SAR); defense readiness; counter-drug 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 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 2** compares planned numbers of NSCs, OPCs, and FRCs in the POR to those in the objective fleet mix.

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[14] CRS Report R42567, *Coast Guard Cutter Procurement: Background and Issues for Congress*, by Ronald O'Rourke.

[15] 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.

[16] 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.

Table 2. 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 2**, 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 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 3** compares the POR to FMAs 1 through 4.

Table 3. 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 4** shows the POR and FMAs 1 through 4 in terms of their mission performance gaps.

Table 4. 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, pages ES-12 and 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).

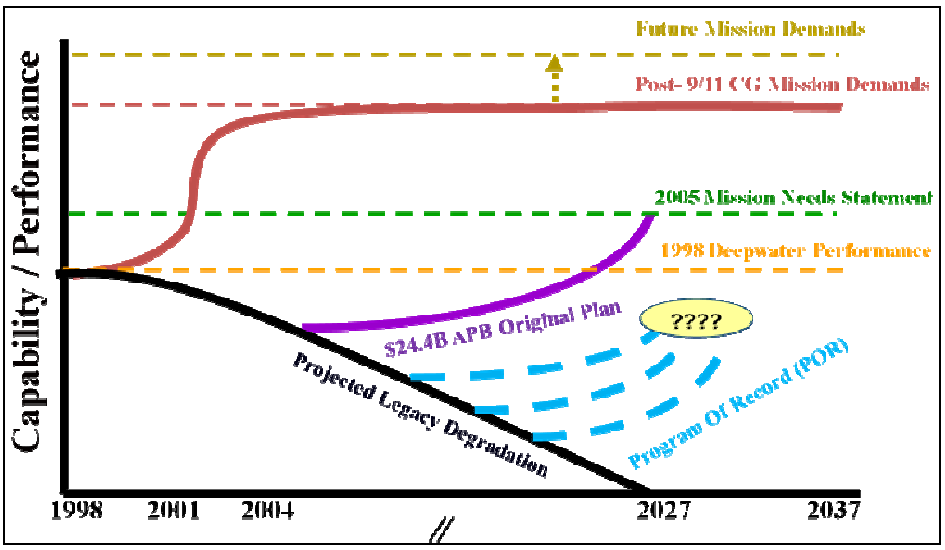
d. This gap occurs in the Southeast and Western operating areas.

e. This gap occurs in the Northeast operating area.

Figure 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 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 3** 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 3** 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.[17] GAO again presented them in a July 2011 report.[18]

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 5** compares the POR to the objective fleet mix from FMA Phase 1 and the refined objective mix from FMA Phase 2.

[17] 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.

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

Table 5. 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.

As can be seen in **Table 5**, 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.

Compared to the POR, the larger force mixes shown in **Table 3** and **Table 5** would be more expensive to procure, operate, and support than the POR force. Using average NSC, OPC, and FRC procurement cost figures, 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.[19]

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 3** and **Table 5** 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.[20]

The POR was originally defined in 2004 as the optimal mix of assets that could be acquired for a total estimated acquisition cost of about $24 billion, and the $24 billion figure was for a time referenced as a baseline in discussing Coast Guard plans for acquiring new deepwater-capable ships and aircraft.

[19] 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.

[20] 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.